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Vol. I

TRANSCRIPT OF RECORD

17,344
SC.

Supreme Court of the United States

OCTOBER TERM, 1938

No. 661

GENERAL ELECTRIC SUPPLY CORPORATION,
PETITIONER,

vs.

THE MAYTAG COMPANY

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE SEVENTH CIRCUIT

United States Circuit Court of Appeals

EIGHTH CIRCUIT.

No. 11,234

IN EQUITY.

GENERAL ELECTRIC SUPPLY CORPORATION,
APPELLANT,

vs.

THE MAYTAG COMPANY, APPELLEE.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE WESTERN DISTRICT OF MISSOURI.

FILED JUNE 18, 1938.

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39, Defendant's Deposition, Exhibit 23, Check, Perry C. Miller to Wm. S. Miller, $50.00, May 15, 1916	1819	1823
Defendant's Deposition, Exhibit 24, Check, Harry E. Barnhart to Wm. S. Miller, $80.00, June 18, 1918	1820	1825
Defendant's Deposition, Exhibit 25, Letters Patent No. 53,745 to William S. Miller for Design, August 26, 1919	1821	1827
Defendant's Deposition, Exhibit 26, Check, Harry E. Barnhart to Mrs. Mollie Opel, $15.00, December 17, 1915	1823	1829
Defendant's Deposition Exhibit 137, Drawing of Miller Washing Machine (corrugated tub)	1825	1831
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2, (Defendant's Exhibit 14), Photograph of Snyder Glass Tub Machine and Agitator	1831	1841
3, (Defendant's Exhibit 15), Photograph of Doughty and Davis Celluloid Tub Washing Machine	1832	1843
4, (Defendant's Exhibit 16), Photograph of Jardine Glass Tub Washing Machine and Baffles	1833	1845
5, (Defendant's Exhibit 17), Photograph of General Electric Glass Tub Washing Machine	1834	1847
6, (Defendant's Exhibit 18), Photograph of Glass Tub Machine for overhead Agitators, etc	1835	1849
7, (Defendant's Exhibit 23), Photograph of Variable Speed Machine	1836	1851
8, (Defendant's Exhibit 20), Photograph of Davis 1900 Form 3, smooth copper tub Washing Machine	1837	1853
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10, (Defendant's Exhibit 19), Photograph of W. S. Miller Smooth Tub Washing Machine sold in 1919	1839	1857
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Attest:

E. E. KOCH,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

(Seal)

Be it Remembered that heretofore, to-wit: on the eighteenth day of June, A. D. 1938, a transcript of record, pursuant to an appeal allowed by the District Court of the United States for the Western District of Missouri, was filed in the office of the Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, in a certain cause wherein the General Electric Supply Corporation, was Appellant, and The Maytag Company, was Appellee, which said transcript as prepared and printed pursuant to stipulation relating to exhibits under the rules of the United States Circuit Court of Appeals for the Eighth Circuit, under the supervision of its Clerk, is in the words and figures following, to-wit:

a (Stipulation Relating to Exhibits in Printed Record, etc.)

United States Circuit Court of Appeals, Eighth Circuit.

General Electric Supply Corporation, Appellant,
Docket No. 11,234. vs.
The Maytag Company, Appellee.

It Is Hereby Stipulated And Agreed, by and between counsel for the respective parties, that, in order to avoid duplication and the inclusion of unnecessary material in the printed record on appeal in the above-entitled case, certain parts of the certified transcript of record on appeal, as hereinafter stated, shall not be printed, and that in the case of some of the omitted exhibits, statements shall be inserted in lieu thereof as hereinafter provided:

1. In lieu of Bill of Complaint filed Feb. 5, 1937 and copy of Snyder patent No. 1,866,779 annexed thereto, print the following:

Bill of Complaint, filed Feb. 5, 1937.

Note: This and Amended and Substituted Bill of Complaint printed pp. 7, infra., differ only in that Bill of Complaint does not contain the last two paragraphs of Allegation II of Amended and Substituted Bill of Complaint, and alleges in Allegation V infringement of claims 1, 2, 3, 20, 21,
23, 25, 26 and 29 to 30, inclusive, instead of merely
b claims 23, 26 and 29 as in Amended and Substituted Bill of Complaint.

2. In lieu of copy of Snyder patent No. 1,866,779, annexed to Amended and Substituted Bill of Complaint, print the following:

Copy of Snyder patent No. 1,866,779, in suit, is reproduced as Plaintiff's Exhibit 1, at pp. 563, 580, infra.

3. In lieu of a copy of Parkinson & Lane letter dated February 1, 1937 and attached to Answer of the Defendant General Electric Supply Corporation, print the following:

Letter annexed hereto as "Exhibit A" is printed at p. 85, infra.

4. Do not print the form of order in blank annexed to Motion for Supersedeas Pending Appeal.

5. Plaintiff's Exhibit 2 contained in the certified transcript of record on appeal shall not be printed.

6. In lieu of printing the following plaintiff's exhibits, the statements set forth below as to each respectively shall be printed:

A. In lieu of Plaintiff's Exhibit 9A, print the following:

Plaintiff's Exhibit 9A is a copy of Fig. 1 of the Snyder patent No. 1,866,779, in suit, as reproduced at p. 563, supra.

B. In lieu of Plaintiff's Exhibit 13 print the following:

Plaintiff's Exhibit 13, a copy of Snyder patent No. 1,209,893, is reproduced as part of Defendant's Exhibit 13, at p. 1111, infra.

C. In lieu of Plaintiff's Exhibit 18-1 print the following:

Plaintiff's Exhibit 18-1 is a duplicate of Plaintiff's Exhibit 6-A, reproduced at p. 609, supra.

D. In lieu of Plaintiff's Exhibit 18-2, print the following:

Plaintiff's Exhibit 18-2 is a duplicate of Plaintiff's Exhibit 6-C, reproduced at p. 613, supra.

E. In lieu of Plaintiff's Exhibit 18-3, print the following:

Plaintiff's Exhibit 18-3 is a duplicate of Plaintiff's Exhibit 6-E, reproduced at p. 617, supra.

F. In lieu of Plaintiff's Exhibit 18-4, print the following:

Plaintiff's Exhibit 18-4 consists of two cuts, duplicates of Plaintiff's Exhibits 6-J and 6-K, reproduced at pp. 627, 629, supra.

G. In lieu of Plaintiff's Exhibit 18-5 print the following:

Plaintiff's Exhibit 18-5 consists of two cuts, duplicates of Plaintiff's Exhibits 6-L and 6-M, reproduced at pp. 631, 633, supra.

H. In lieu of Plaintiff's Exhibit 18-6 print the following:

Plaintiff's Exhibit 18-6 is a duplicate of Plaintiff's Exhibit 6-N, reproduced at p. 635, supra.

d I. In lieu of Plaintiff's Exhibit 19-3 print the following:

Plaintiff's Exhibit 19-3 is a cut substantially the same as that reproduced at p. 719, supra., as Plaintiff's Exhibit 19-1.

J. In lieu of Plaintiff's Exhibit 27-2, print the following:

Plaintiff's Exhibit 27-2, is a photograph, the subject matter of which is the same as that shown in Plaintiff's Exhibit 27-1, except that in Exhibit 27-2 the lids of the machine are closed.

K. In lieu of Plaintiff's Exhibit 28 print the following:

Plaintiff's Exhibit 28 is the same as the drawing in Snyder patent No. 1,391,214 reproduced in Plaintiff's Exhibit 30, at p. 799, infra.

7. In Defendant's Exhibit 35, in lieu of U. S. Patents Nos. 1,118,210, 1,240,826, British Patent No. 18,202, and French Patent No. 363,514, print the following:

Additional patents forming part of Defendant's Exhibit 35 are:

Reproduced

U. S. Patent No. 1,118,210 to Mills, et al., p. 1097, supra.

U. S. Patent No. 1,240,826 to Davis, p. 1055, supra.

British Patent No. 18,202 to Jardine, p. 1047, supra.

French Patent No. 363,514 to Henin, p. 1073, supra.

e 8. The following, only, of the blueprints comprising the item labeled "Defendant's Deposition Exhibit A" in Defendant's Exhibit 38, shall be reproduced as illustrative:

Gear Case (Casting) part No. 802, sheet No. 1, dated 4/7/21.

Gear Case (Casting) part No. 802, sheet No. 2, dated 4/7/21.

Agitator Thumb Screw, part No. 833A, dated 5/29/21.

Submerged Agitator Gearing, part No. S-256, sheet No. 1, dated 7/20/21.

Submerged Agitator Gearing, part No. S-256, sheet No. 2, dated 8/1/21.

Agitator, part No. 849, dated 9/19/21.

Slat for Agitator, part No. 865, dated 10/19/21.

9. In lieu of printing the following items in Defendant's Exhibit 38, the statements set forth below as to each respectively shall be printed:

A. In lieu of the item labeled "Defendant's Deposition Exhibit 3", a copy of U. S. Patent No. 1,240,826 to Davis, print the following:

Defendant's Deposition Exhibit 3 is U. S. Patent No. 1,240,-826 to Davis, which is reproduced as part of Defendant's Exhibit 13, at p. 1055, supra.

B. In lieu of item labeled "Defendant's Deposition Exhibit 5" a copy of U. S. Patent No. 1,496,305 to Doughty, et al., print the following:

Defendant's Deposition Exhibit 5 is U. S. Patent No. 1,496,305 to Doughty & Davis which is reproduced as part of Defendant's Exhibit 13, at p. 1039, supra.

f C. In lieu of the item labeled "Defendant's Deposition Exhibit 6" a copy of U. S. patent 1,748,442 to Davis, print the following:

Defendant's Deposition Exhibit 6 is U. S. Patent No. 1,748,-442 to Davis, which is reproduced as Defendant's Exhibit 6, at p. 995, supra.

D. In lieu of the last sheet of the item labeled "Defendant's Deposition Exhibit 9", a copy of a blueprint of sketch 522 dated March 22, 1921, print the following:

The blueprint annexed to the foregoing letter is the same as the drawing reproduced at p. 1733, infra., and labeled "Defendant's Deposition Exhibit 9A".

10. The following items contained in the certified transcript of record on appeal shall not be printed:

(a) In Defendant's Exhibit 38, the item labeled "Defendant's Deposition Exhibit 101";

(b) In Defendant's Exhibit 39, the item labeled "Defendant's Deposition Exhibit 24" excepting check No. 28 dated June 18, 1918, which shall be reproduced as illustrative;

(c) In Defendant's Deposition Exhibit 39, the item labeled "Defendant's Deposition Exhibit 27".

g 11. In lieu of Defendant's Exhibit 46, print the following:

Defendant's Exhibit 46 is a tracing of the drawing which is reproduced at p. 1871, infra., as Defendant's Exhibit 46A.

It Is Further Stipulated that the documentary exhibits which are not printed may be referred to by either party at the hearing of this cause if desired.

WATSON, BRISTOL, JOHNSON & LEAVENWORTH,
Counsel for Appellant.

Dated: June 20, 1938.

PARKINSON & LANE,
Counsel for Appellee.

Dated: June 24, 1938.

(Endorsed): No. 11,234. Stipulation relating to Exhibits in printed record, etc. Filed in U. S. Circuit Court of Appeals on June 27, 1938.

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h Citation on Appeal.

United States District Court,
Western District of Missouri,
Western Division.

The Maytag Company, a corporation, Plaintiff,
No. 2892. vs. In Equity.
General Electric Supply Corporation, a corporation, Defendant.

United States of America—ss.:

To: The Maytag Company—Greeting:

You are hereby cited and admonished to be and appear at a session of the United States Circuit Court of Appeals for the Eighth Circuit to be holden in the United States Court House in the City of St. Louis, State of Missouri, on the 16th day of April, 1938, pursuant to an appeal duly allowed by an order of the District Court of the United States for the Western District of Missouri, Western Division, from a decree of said District Court, in a suit in equity, No. 2892, wherein General Electric Supply Corporation is defendant-appellant and you, the said The Maytag Company are plaintiff-appellee, to show cause, if any there be, why the decree rendered

against the said appellant should not be corrected and why speedy justice should not be done to the parties in that behalf.

Witness the Honorable Merrill E. Otis, United States District Judge for the Western District, Western Division of Missouri, this 7th day of March, 1938.

MERRILL E. OTIS,
United States District Judge.

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i Service of the above citation, together with copies of the Petition for Appeal, Order Allowing Appeal, and Assignment of Errors, acknowledged this 7th day of March, 1938.

WALLACE R. LANE,
PAPKINSON & LANE,
NELSON E. JOHNSON,
Attorneys for Plaintiff-Appellee.

Endorsed: Filed in U. S. District Court on March 7, 1938.

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1 United States of America, Sct.:

Be it remembered that heretofore, to-wit, at the regular April term of the United States District Court for the Western Division of the Western District of Missouri, and on the 5th day of February, 1937, there was filed in the office of the clerk of said court a Bill of Complaint in the cause wherein The Maytag Company, a corporation, is Plaintiff and General Electric Company, and General Electric Supply Corporation, both corporations, are Defendants.

Said Bill of Complaint is as follows:

* * * * * * * *

2 Bill of Complaint, Filed Feb. 5, 1937.

Note: This and Amended and Substituted Bill of Complaint printed pp. 7, infra., differ only in that Bill of Complaint does not contain the last two paragraphs of Allegation II of Amended and Substituted Bill of Complaint, and alleges in Allegation V infringement of claims 1, 2, 3, 20, 21, 23, 25, 26 and 29 to 30, inclusive, instead of merely claims 23, 26 and 29 as in Amended and Substituted Bill of Complaint.

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25 Amended and Substituted Bill of Complaint.

United States District Court, Western District of Missouri, Western Division.

The Maytag Company, a corporation, Plaintiff,
No. 2892. vs. In Equity.
General Electric Company, and General Electric Supply Corporation, both corporations, Defendants.

To the Honorable, the Judges of said Court:

The Maytag Company, a corporation duly organized and existing under and by virtue of the laws of the State of Delaware, a citizen, inhabitant and resident of the State of Delaware, having an office and place of business at Newton, Iowa, brings this its Amended and Substituted Bill of Complaint against General Electric Company, a corporation organized and existing under the laws of the State of New York and licensed to do business in the state of Missouri as a foreign private corporation, and General Electric Supply Corporation, a corporation organized and existing under the laws of the State of Delaware and being licensed to transact business in the State of Missouri as a foreign private corporation, both of which said corporations have regular and established places of business in Kansas City, Missouri, within the
26 Western Division of the Western District of Missouri, the former at 106 West Fourteenth Street, Kansas City, Missouri, and the latter at 1411 Walnut Street, Kansas City, Missouri, and both being citizens of the state of their respective incorporation, inhabitants and residents of the State of Missouri and of the Western Division of the Western District thereof where both have, both jointly and severally, committed acts of infringement as hereinafter set forth and alleged, and plaintiff says:

I.

This is a suit under the patent laws of the United States for infringement of Letters Patent No. 1,866,779, issued July 12, 1932, to Howard F. Snyder, assignor to The Maytag Company, a corporation of Delaware, on a Washing Machine.

II.

Howard F. Snyder, being the first, original, and sole inventor of a certain new and useful washing machine not known or used by others in this country before his invention thereof and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his applica-

toin for patent thereon in the United States and not patented in a country foreign to the United States on an application filed by him or his legal representatives or assigns more than twelve months before his application for patent in the United States and not in public use or on sale in the United States for more than two years prior to his said application and not abandoned, the said Howard F. Snyder made due application in the United States Patent Office on June 14, 1922, Serial No. 568,158, for a patent for said invention and discovery, and having complied in all respects with the requirements of law of the United States for the grant of Letters Patent and the said application having been duly prosecuted, and the said invention and application therefor having by lawful and proper mesne assignments in writing duly executed and delivered and recorded in the United States Patent Office, been sold, assigned and transferred unto The Maytag Company, a Delaware corporation, together with all rights in, to and under the same, including all rights of recovery for past infringement thereof, which said assignments or duly certified copies thereof are ready here in court to be produced, there was on the 12th day of July, 1932, duly issued to plaintiff, The Maytag Company, a Delaware corporation, as the assignee by mesne assignments of said Howard F. Snyder, Letters Patent of the United States No. 1,866,779, duly sealed and countersigned and executed in due form of law, whereby there was vested in plaintiff, its successors and assigns for the term of seventeen years from and after the 12th day of July, 1932, the exclusive right to make, use and sell said invention throughout the United States and the territories and possessions thereof, the original of said patent or a duly certified copy thereof being ready here in court to be produced, and a printed Patent Office copy of the specification, claims and drawings thereof are filed herewith as "Plaintiff's Exhibit, Plaintiff's Patent."

In said Letters Patent No. 1,866,779, plaintiff, having just become aware of reason to believe that the said patentee Howard F. Snyder through inadvertence, accident or mistake and without any fraudulent or deceptive intention or willful default claimed as his invention or discovery more than that of which he was the first inventor or discoverer, thereupon, on or about February 20, 1937, without unreasonable neglect or delay, made and entered a disclaimer in writing in the United States Patent Office of Claims 1 and 38 of said Letters Patent, averring therein that the subjects-matter of the remaining claims of said Letters Patent are the invention of said Snyder

and are a material and substantial part of the thing patented, and are definitely distinguishable from the matter disclaimed.

A copy of said disclaimer is attached hereto and made a part hereof, and a duly certified copy thereof is ready here in court to be produced.

29

III.

Plaintiff states that by virtue of the premises, it became, ever since has been, and is now the sole and exclusive owner of said invention and discovery and said Letters Patent No. 1,866,779, and of all rights and privileges granted and secured or intended to be granted and secured thereby, including all rights of recovery for past infringement thereof.

Plaintiff and its predecessors have invested and expended large sums of money and been to great trouble and expense in and about said invention and discovery for the purpose of introducing the same into use and making the same profitable and useful, and said invention is of great commercial value and practical utility and of great benefit and advantage to plaintiff and the public, and if plaintiff can receive lawful protection against infringement of said Letters Patent, they will be of great value to it and large profits will accrue to it therefrom.

Plaintiff maintains a large and extensive plant and factory and a large force of employees for the making of said washing machines, and has the necessary facilities for supplying all demands for said invention made under and in accordance with said patent promptly and at a fair and reasonable cost and price to the public.

IV.

Plaintiff has marked or caused to be marked since the issuance of said Snyder patent No. 1,866,779, dated July
30 12, 1932, all of its devices made under said patent with the patent markings required by law. These defendants have each been duly notified of their respective infringement of said patent, plaintiff's ownership thereof and rights thereunder, and have been requested to desist from infringement thereof, but each has refused so to do and continued after notice to make, sell and use said infringing washing machines.

V.

Defendants well knowing the premises and in violation of the rights of plaintiff after notice of said patent, plaintiff's exclusive rights thereunder and of their infringement there-

of, without authority under said Letters Patent or otherwise, since the issue thereof and the acquirement of plaintiff's exclusive rights thereunder and prior to the commencement of said suit and within six years within the Western Division of the Western District of Missouri and elsewhere in the United States and the territories thereof, have both jointly and severally wrongfully, wantonly and continuously infringed said Letters Patent No. 1,866,779, dated July 12, 1932, particularly claims 23, 26 and 29, by making or having made, selling and using washing machines embodying the said invention, such as General Electric Washing Machine Model AW-19, and others, on a large and growing scale and are still so doing and are threatening so to do in the immediate future and during the term of said Letters Patent. Although requested to
31 desist from such infringement, defendants refuse so to do whereby plaintiff has been, is still being and will be, so long as such infringement continues, greatly and irreparably damaged and injured and deprived of profits which it would otherwise make under said Letters Patent and defendants have made and are making by such infringement large and continuing profits which belong to plaintiff, the amount of which profits plaintiff can not ascertain except by the accounting herein prayed. Defendants' acts are also having the effect of inducing and causing others to disregard plaintiff's rights and to infringe its said patent.

VI.

Forasmuch as plaintiff can have no adequate relief except in this Court of Equity, and as the proceedings of defendants are contrary to equity, and to the end therefore that defendants may show if they can why plaintiff should not have the relief hereby prayed and may without oath, answer under oath being hereby expressly waived, to the best and utmost of their knowledge, remembrance, information and belief, full, true, direct and perfect answer make, to all and singular, the matters and things hereinbefore stated and charged, as fully and particularly as if separately and severally interrogated as to each and every of said matters, plaintiff files this its Amended and Substituted Bill of Complaint.

32 Wherefore plaintiff prays a preliminary injunction pending this suit and a perpetual injunction restraining and enjoining defendants, both jointly and severally, their officers, agents, servants, employes and attorneys, and those in active concert or participating with them from making, or causing to be made, selling or using said patented invention or any part thereof, or offering so to do or aiding or abetting or in any way inducing or contributing to infringe-

ment of said patent No. 1,866,779, dated July 12, 1932, and from in any way advertising or offering for sale said washing machines herein complained of.

Plaintiff further prays that said patent No. 1,866,779 dated July 12, 1932, may be decreed to be valid and plaintiff to be the sole and lawful owner thereof and of all rights thereto and thereunder.

Plaintiff further prays that this cause may be referred to a Master to take and state an accounting of profits and damages accruing by reason of said infringement and that said Master may be given all the powers conferred upon Masters by law and the Rules in Equity, and that plaintiff may have judgment for the profits, damages, gains, savings, advantages and benefits so found, and all costs of this suit, including plaintiff's disbursements and that the damages awarded may be increased threefold in view of the wanton char-
33 acter of this infringement and that plaintiff may have such other and further relief as equity may require.

THE MAYTAG COMPANY,
By Roy A. Bradt, Vice-President.

Wallace R. Lane,
George Mankle,
Nelson E. Johnson,
Solicitors and of Counsel
for Plaintiff.

34 State of Illinois,
County of Cook.—ss.:

Roy A. Bradt, being first duly sworn on oath states that he is the Vice-President of The Maytag Company, a Delaware corporation, plaintiff herein; that he has read the foregoing Amended and Substituted Bill of Complaint and knows the contents thereof of his own knowledge, and that the same is true, except as to those matters stated to be on information and belief, and as to those matters he believes them to be true; that he verily believes that said Howard F. Snyder was the original, first and sole inventor of said washing machine, and that the title to said patent is in plaintiff.

ROY A. BRADT.

Subscribed and sworn to before me at Chicago, Illinois, this 22 day of February, 1937.

Seal J. REX ALLEN, JR.,
Notary Public.

My commission expires Nov. 22, 1938.

Copy of Snyder Patent No. 1,866,779, in suit, is reproduced as Plaintiff's Exhibit 1, at pp. 563, infra.

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35 (Disclaimer of Maytag Company of Certain Claims of Letters Patent No. 1,866,779.)

In the United States Patent Office.

In the Matter of

Letters Patent No. 1,866,779 Issued July 12, 1932 To Howard F. Snyder For Washing Machines

To the Honorable Commissioner of Patents:

Your Petitioner, The Maytag Company, a corporation of Delaware, having a place of business at Newton, Jasper County, Iowa, represents that Letters Patent of the United States No. 1,866,779, were granted to it, as assignee of Howard F. Snyder, on July 12, 1932, for a certain improvement in Washing Machines, and that it is now the sole owner of the entire right, title and interest in and to said Letters Patent; that it has just become aware of reasons to believe that through inadvertence, accident or mistake, and without any fraudulent or deceptive intention or willful default, the patentee claimed more than that of which he was the original or first inventor or discoverer in the following claims, to-wit:

"1. The method of cleansing fabrics in a tub consisting in agitating a washing fluid in such a way as to create positively driven violently flowing currents moving away from and back to the plane of the source of agitation, and also around
36 the tub in one direction in a plane—approximately parallel with the plane of agitation, and then causing it to move away from and back to the plane of the source of agitation and in a reverse direction in a plane approximately parallel with the plane of agitation so as to bodily and forcibly cause the fabrics in the tub to travel in substantially the same paths as the fluid, whereby thorough cleansing of the fabric is effected without substantial contact with the rubbing surfaces.

"38. The method of washing fabrics by forcing cleansing liquid through and around them while substantially suspended by the action of the fluid, as distinguished from pulling fabrics through the fluid against scrubbing corrugations, or otherwise scrubbing them by mechanical means, comprising immersing the fabrics in a washing fluid in a container, then vigorously and rapidly impelling the washing fluid

in one and then in an opposite outward circulatory direction away from the plane of the source of impulsion and through the fabrics and circumferentially along the interior of the container in rapid succession, and causing these violently opposed currents of fluid to meet and flow inwardly and toward the central portion of the container, and toward the source of impulsion thereby substantially suspending the fabrics in the fluid and cleansing them while thus suspended."

And your Petitioner therefore hereby enters its disclaimer of the above claims of said Letters Patent.

Your Petitioner avers that the subjects matter of the remaining claims of said Letters Patent are the invention of said Snyder and are a material and substantial part of the thing patented, and are definitely distinguishable from the matter herein disclaimed.

Your Petitioner herewith tenders the sum of Ten ($10.00) Dollars to be applied as the statutory fee for entering this disclaimer.

37

Signed at Newton, in the County of Jasper, and State of Iowa, this 20th day of February, 1937.

THE MAYTAG COMPANY,
By Roy A. Bradt.

Attest:

E. L. Nelson,
Secretary.

Witness:

E. G. Higdon,
Geo. M. Umbreit.

Filed in the United States District Court, Feb. 23, 1937.

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38 Answer of the Defendant General Electric Supply Corporation, As Amended.

To the Honorable the Judges of the United States District Court For the Western Division of the Western District of Missouri:

The defendant, General Electric Supply Corporation, making no answer to allegations pertaining to General Electric Company, answers so much of the amended and substituted bill of complaint filed herein on or about February 23, 1937 as pertains to it as follows:

1. Defendant is without knowledge whether The Maytag Company is a corporation duly organized and existing under

and by virtue of the laws of the State of Delaware and is a citizen inhabitant and resident of the State of Delaware, having an office and place of business at Newton, Iowa; defendant admits that General Electric Supply Corporation is a corporation organized and existing under the laws of the State of Delaware, that it is licensed to transact business in the State of Missouri as a foreign private corporation, that it has a regular and established place of business at 1411 Walnut Street, Kansas City, Missouri, within the
39 Western Division of the Western District of Missouri, and that it is a citizen of the State of its incorporation, but defendant denies that it is an inhabitant and resident of the State of Missouri and of the Western Division of the Western District thereof and denies that it has committed any acts of infringement.

2. Defendant denies that the letters patent in suit are valid and infringed, but admits all other allegations of paragraph I of the amended and substituted bill of complaint.

3. Defendant admits that Howard F. Snyder made application in the United States Patent Office on June 14, 1922, Serial No. 568,158, for a patent for an alleged invention on a washing machine and that on the 12th day of July, 1932, there was issued to plaintiff, The Maytag Company a Delaware corporation, as the assignee by mesne assignments of Howard F. Snyder, letters patent of the United States No. 1,866,779; defendant is without knowledge whether the alleged invention was patented in a country foreign to the United States on an application filed by Snyder or his legal representatives or assigns more than twelve months before his application for patent in the United States and defendant is without knowledge, save from the patent in suit, whether the alleged invention and application therefor was, by lawful and proper mesne assignments in writing duly executed and delivered and recorded in the United States Patent Office, sold, assigned and transferred unto The Maytag Company, a Delaware corporation, together with all rights in, to and under the same including all rights of recovery for past infringement thereof; defendant admits that on or
40 about February 20, 1937 plaintiff made and shortly thereafter entered in the United States Patent Office a disclaimer in writing of claims 1 and 38 of Letters Patent No. 1,866,779 and averred therein that the subjects matter of the remaining claims of said letters patent are the invention of said Snyder and are a material and substantial part of the thing patented, and are definitely distinguishable from the matter disclaimed; defendant is without knowledge whether plaintiff just became aware of reason to believe that the said

patentee Howard F. Snyder, through inadvertence, accident or mistake and without any fraudulent or deceptive intention or wilful default claimed as his alleged invention or discovery more than that of which he was the alleged first inventor or discoverer; and defendant denies each and every other allegation of paragraph II of the amended and substituted bill of complaint.

4. Defendant is without knowledge of each and every allegation of paragraph III of the amended and substituted bill of complaint.

5. Defendant is without knowledge whether plaintiff has marked or caused to be marked, since the issuance of the said Snyder patent No. 1,866,779, dated July 12, 1932, all of its devices made under said patent with the patent markings required by law; defendant admits receiving from Parkinson & Lane a letter dated February 1, 1937, copy of which is annexed hereto marked Exhibit A, but defendant denies each and every other allegation contained in paragraph IV of the amended and substituted bill of complaint.

41 6. Defendant admits that it has sold and intends to continue to sell within the Western Division of The Western District of Missouri and elsewhere General Electric washing machines, including model AW-19 and other models; but defendant on information and belief denies each and every other allegation contained in paragraph V of the amended and substituted bill of complaint, and in particular defendant denies that it has infringed upon said letters patent No. 1,866,779 or any of the claims thereof or any valid rights of the plaintiff thereunder, either severally or jointly with any other.

7. Defendant on information and belief denies that plaintiff can have no adequate relief except in this Court of Equity and that the proceedings of defendant are contrary to equity as alleged in paragraph VI of the amended and substituted bill of complaint.

8. Except as hereinbefore specifically admitted defendant denies each and every allegation of said amended and substituted bill of complaint which pertains to it (making no answer to allegations pertaining to General Electric Company), and denies all and all manner of wrongdoing with which it is charged by the said amended and substituted bill of complaint, all of which matters and things this defendant is willing to maintain and prove as this Honorable Court shall direct.

9. Defendant further answering said bill avers that the aforesaid Letters Patent No. 1,866,779 are and were at all times invalid and void on the following grounds among others:

42 (a) That the said Howard F. Snyder was not the original, first and sole inventor and discoverer of the alleged washing machine and method described and claimed in said patent, or of any material or substantial part thereof, but that on the contrary long prior to the alleged invention or discovery by said Snyder and more than two years prior to his application for said Letters Patent No. 1,866,779, the washing machine and method purporting to be patented thereby and all material and substantial parts thereof were known and used by others in this country and were patented and described in printed publications in this and foreign countries. The prior patents and publications referred to, insofar as at present ascertained, are as follows:

United States Letters Patent.

Patentee	Number	Date
Ferguson	83,145	Oct. 20, 1868
Harmance	88,478	March 30, 1869
Groat	113,762	April 18, 1871
Runkle	131,629	Sept. 24, 1872
Mills	1,118,210	Nov. 24, 1914
Snyder	1,209,893	Dec. 26, 1916
Davis	1,240,826	Sept. 15, 1917
Doughty et al	1,496,305	June 3, 1924
Morse	106,853	Aug. 30, 1870

British Letters Patent.

Hanna	19,027	1889
Jardine	18,202	1891

French Letters Patent.

Henin	363,514	Aug. 2, 1906

43 and other patents and publications which defendant prays leave to insert in this answer by amendment as soon as discovered.

The names and addresses of persons alleged to have invented or to have had prior knowledge of and used the machine and method patented by said Letters Patent within the United States, and places of their use, insofar as at present ascertained, are as follows:

Nineteen Hundred Washer Company, Binghamton, N. Y.

George L. Davis, Binghamton, N. Y.

Herman W. Doughty, Binghamton, N. Y.

Watson A. Osgood, Syracuse, N. Y.

Laura Wensley, Syracuse, N. Y.

Thomas W. Behan, Binghamton, N. Y.

Robert D. Quinn, Binghamton, N. Y.

Miller Manufacturing Company, Inc., Meyersdale, Pa.

William S. Miller, Meyersdale, Pa.

Charles F. Jenkins, Meyersdale, Pa.

John N. Lint, Meyersdale; Pa.

Harry E. Barnhart, Johnstown, Pa.

Walter H. Barnhart, Johnstown, Pa.

Verne M. Barnhart, Johnstown, Pa.

and also the patentees and assignees of said Letters Patent above listed at the addresses given therein and elsewhere, and others not at present ascertained but which defendant prays leave to insert in this answer by amendment when discovered.

(b) The alleged invention claimed in said Letters Patent does not constitute patentable invention, improvement or discovery within the meaning of the patent law in view
44 of the prior state of the art as disclosed in the various patents hereinabove enumerated and various others, and in view of what was common knowledge of those above named and others skilled in the art at the time of the alleged invention of the same by the said patentee.

(c) The description and disclosure of such alleged invention contained in said Letters Patent are not in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it pertains or with which it is most nearly connected to make, construct and use the same.

(d) The claims of said Letters Patent are vague, ambiguous and indefinite and fail particularly to point out and distinctly claim the part, improvement or combination claimed by the patentee as his invention or discovery.

10. Defendant further avers that in a certain suit brought by this plaintiff against Brooklyn Edison Company, Inc. in the U. S. District Court for the Eastern District of New

York, Equity No. 6888 the aforesaid Letters Patent No. 1,866,779 were held invalid by the U. S. Circuit Court of Appeals for the Second Circuit in a decision rendered November 30, 1936 and reported at 86 F. (2d) 625; that a petition by plaintiff to the United States Supreme Court for a writ of certiorari to review said decision of the Circuit Court of Appeals for the Second Circuit was denied February 15, 1937; that said decision was and is in all respects just and proper in law and in equity; and that the present suit is no more than an attempt by said plaintiff to relitigate in this court issues decided against it in said case of The Maytag Company vs. Brooklyn Edison Co., Inc.

45 11. Defendant further avers that the aforesaid Letters Patent No. 1,866,779 are invalid and void for the reason that the patentee Howard F. Snyder, and the plaintiff, in said patent No. 1,866,779 claimed more than that of which said Snyder was the original or first inventor or discoverer, and claimed said Snyder to be the original and first inventor or discoverer of material and substantial parts of the thing patented of which he was not the original and first inventor or discoverer; and plaintiff, although duly advised thereof by the proceedings and the decree of the United States Circuit Court of Appeals for the Second Circuit entered December 7, 1936 in a suit on said patent between plaintiff and the Brooklyn Edison Company, Inc. (opinion rendered November 30, 1936, reported at 86 F. (2d) 625—petition to United States Supreme Court for writ of certiorari denied February 15, 1937), has unreasonably neglected and delayed to enter disclaimer thereto.

12. Defendant further avers that the aforesaid Letters Patent No. 1,866,779 are invalid and void for the reason that although plaintiff has been duly advised as aforesaid that said patentee claimed more than that of which he was the original or first inventor or discoverer, and plaintiff made and filed in the United States Patent Office a disclaimer of claims 1 and 38 of said patent, in which disclaimer plaintiff acknowledged and stated that said patentee was not the original or first inventor or discoverer of the subject matter set forth in said claims 1 and 38, nevertheless plaintiff has unreasonably neglected and delayed to enter a disclaimer
46 to subject matter purported to be patented in other claims of said patent, not definitely or patentably distinguishable from the parts claimed without right in said claims 1 and 38 prior to the disclaimer thereof.

13. Defendant avers that in view of the prior art and the language of the claims of said letters patent, said letters pat-

ent are of such limited scope that they do not cover any device sold by defendant: and that if said letters patent be given a sufficiently broad interpretation to cover any device sold by defendant, then said patent is invalid and void in view of the prior state of the art and in view of the prior patents, uses and knowledge referred to in paragraph 9(a) of this answer.

14. Defendant further avers that it has not at any time infringed or threatened to infringe said letters patent, nor has it in any way infringed or threatened to infringe any rights whatsoever of the plaintiff or caused said plaintiff any damage or injury whatsoever, and that plaintiff has no right of action against defendant.

15. Defendant further avers, as to General Electric washing machines Models 2-G and 3-G sold by it, that they were and are manufactured by Easy Washing Machine Corporation, and that they are immune from attack by this plaintiff on said letters patent number 1866779 to Snyder by reason of a final decree entered on or about June 9, 1937, in the United States District Court for the Southern District of New York, in the case of The Maytag Company vs. Easy Washing Machine Corporation, Equity Number 75-202, holding claims 23, 26 and 29 of said Snyder patent invalid.

Wherefore defendant prays that the bill of complaint herein be dismissed with costs to defendant, and for such other and further relief as to the Court may seem just and proper.

Dated, March 24, 1937.

CHARLES M. BLACKMAR,
ROY P. SWANSON,
Solicitors for Defendant.

MICHAELS, BLACKMAR, NEWKIRK, EAGER & SWANSON,

WATSON, BRISTOL, JOHNSON & LEAVENWORTH,

LAWRENCE BRISTOL,
Of Counsel.

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47 Letter annexed hereto as "Exhibit A" is printed at page 85, infra, of this printed record.

Filed in the United States District Court March 25, 1937.

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48 (Opinion on sustaining of Motion of General Electric Company to quash Service of Process on them.)

The motion must be sustained. The only suggestion that General Electric Company infringed in this district is bottomed on the allegation that General Electric Supply Corporation, its wholly owned subsidiary, infringed in this district. But the two corporations are separate entities and it is scarcely debatable but that more must be shown (and more has not been shown here) than ownership by one corporation of the stock of another to establish that the latter is the mere agent or instrumentality of the former.

Motion sustained. It is so ordered. Exception to plaintiff.

MERRILL E. OTIS,
District Judge.

Filed in the United States District Court Oct. 7, 1937.

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49 (Order of District Court sustaining Motion of General Electric Company to quash Service of Process on them.)

This matter coming on to be heard upon the motion to quash service and dismiss the bill for lack of jurisdiction as to the General Electric Company, and was argued by counsel. Upon consideration thereof it is ordered, adjudged and decreed that said motion be sustained and that the service of process on the General Electric Company be quashed and that the bill be dismissed as to the General Electric Company for lack of jurisdiction. Plaintiff is allowed an exception.

MERRILL E. OTIS,
District Judge.

Filed in the United States District Court Oct. 16, 1937.

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50 (Order granting leave to General Electric Supply Corporation to amend Answer.)

In the United States District Court for the Western Division of the Western District of Missouri.

The Maytag Company, a corporation, Plaintiff,
No. 2892. vs. In Equity.
General Electric Supply Corporation, a corporation, Defendant.

Now on this day it is ordered that defendant, General Electric Supply Corporation, is given leave to amend its answer

by interlineation by inserting a paragraph after paragraph 14 thereof. An exception is allowed to the plaintiff.

MERRILL E. OTIS,
District Judge.

Dated November 8, 1937.

Filed in the United States District Court Nov. 8, 1937.

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51 Plaintiff's Suggestions as to Findings of Fact and Conclusions of Law.

The issues in this suit having duly come on to be heard by the Court, commencing November 29th and ending December 4th, and the proofs, arguments and briefs of plaintiff and defendant having been duly considered and due deliberation having been had, I hold and find as follows:

Findings of Fact.

1. Plaintiff, The Maytag Company, is the sole owner of the Snyder patent in suit, No. 1,866,779, issued to it July 12, 1932, claims 23, 26 and 29 of which are here asserted. Plaintiff has its principal place of business in Newton, Iowa, where it has been engaged continuously since early in 1922 in
52 the manufacture and sale of washing machines embodying and utilizing the invention of said Snyder patent. Specimens of these machines are in evidence as Plaintiff's Exhibits 9, 10, and 11. These machines have been extensively sold and used throughout the United States.

2. Defendant, General Electric Supply Corporation, is a corporation organized and existing under the laws of the State of Delaware, having an office and regular and established place of business in Kansas City, Missouri, within the Western Division of the Western District of Missouri.

Subsequent to notice of infringement of the Snyder patent and between its issuance on July 12, 1932, and before the filing of this suit, defendant sold from its place of business in Kansas City, General Electric Washing Machines, "Model AW19 and other models", (see Answer, paragraph 6, and paragraph 4 of stipulation, R. 76).

Defendant's washing machines are illustrated in evidence by one of these machines, Plaintiff's Exhibit 12, by the drawings, Plaintiff's Exhibits 12a and 12b, and in the General Electric Company's circulars and advertisements, Plaintiff's Exhibits 16, 16A, 16B, 16C, 16D, 16E and 16F. It is stipulated that these circulars and advertisements were published

or issued and caused to be distributed by the General
53 Electric Company for use in promoting the sale of its washing machines since January, 1931. (R. 76). They relate to the General Electric Company washing machines here in controversy as all of the washing machines made by it and sold by defendant operate on substantially the same plan and construction. The statements made in these advertisements and circulars "apply to all of them" (Defendant's witness Bobst, R. 486, 487).

3. The General Electric Company's machines sold by the defendant employ and utilize the invention of the Snyder patent, and operate in substantially the same way as the Maytag machines made thereunder by plaintiff. This appears from comparison of the Snyder patent drawings, its specification and claims here in suit, the Maytag machines, Plaintiff's Exhibits 9, 10 and 11, and the Defendant's machines supplemented by the testimony. In each:

(a) The tub has a smooth interior surface free from rubbing projections.

(b) The rotary reciprocatory impeller is mounted in the tub adjacent its bottom.

(c) The impeller has a base and a plurality of blades, each of which is of substantial height and lateral area, as shown in the Snyder patent drawings. It is important to have them thus constructed to secure the water action
54 contemplated by Snyder. The effective water impelling area of these blades is substantially the same in each of these machines. (R. 249).

(d) The impeller has a central portion projecting upwardly from the center of the base in which the drive shaft is fixedly mounted.

(e) The upper surface area of the base is considerably less than the horizontal cross-sectional area of the tub through its upwardly extending portion. [In the Snyder machine with a 22 inch tub, the impeller is 12.7 inches in diameter and defendant's machine with a 22 inch diameter tub, the impeller is 13 inches in diameter.] (R. 271)

(f) The margin of the base of the impeller is spaced a substantial distance away from the upwardly extending portion of the tub (R. 224). This distance is substantially the same in the Snyder patent drawings, the Maytag machines made thereunder, and in defendant's machines, and is important in securing roll-over of the clothes and keeping them well distributed throughout the tub as they are

driven about by the violent water currents created by the impeller.

(g) There is a rotary reciprocating drive shaft extending upwardly through the bottom of the tub into the interior thereof for supporting the impeller for movement in a fixed plane.

(h) There is a power means, including a pinion on
55 the drive shaft, a rack bar cooperating therewith and a motor mounted beneath the tub, for rapidly reciprocating the shaft and impeller.

(i) The construction, positioning and arrangement of the impeller with respect to the tub is such that each blade of the impeller and its adjacent portion of the impeller base when rapidly reciprocated will simultaneously drive the cleansing fluid in one and then an opposite outward upward circulatory direction toward and around the clothes, and act in cooperation with the interior of the tub to cause violently flowing opposed currents of liquid to meet and flow inwardly and downwardly toward the central portion of the tub, and substantially suspend the materials in the fluid while being washed, in accordance with the teachings of the Snyder patent.

Plaintiff's demonstrations before the Court of the Snyder invention as embodied in the Maytag gyrator machine, both in a glass sided tub and in plaintiff's commercial machines, showed that the clothes being washed were driven about in the tub and substantially suspended, as depicted in the Snyder specification and the claims here in suit, by the violent water currents created by the impeller as it was rapidly oscillated back and forth at the bottom of the tub. The clothes were placed in the tub, piece by piece, and were first drawn downwardly, then forced outwardly, upwardly and inwardly, first in one and then in the opposite
56 direction, and kept well distributed throughout the tub, without brading, and acted upon as individual pieces as they were rolled over and over, by the vigorous rapidly moving water currents created by the impeller.

In these demonstrations the machines were operated in a manner described by plaintiff's witnesses and in accordance with the directions issued by plaintiff and the General Electric Company in connection with the sale of their respective machines, and were so loaded that the clothes were "turning over freely in the water." (Pl. Exs. 16B and 11E).

Among the clothes washed in these demonstrations were fragile lace curtains, a variety of towels and a pair of dirty

overalls. These articles were washed in a few minutes (little over 1¾ minutes for the lace curtains [R. 735], 6¾ minutes for a load of towels [R. 738] and 11 minutes for the overalls [R. 756]) without apparent injury to any of them. When the machines were thus loaded the washing was done largely by the violent water action, by which the clothes were flexed, rolled over and over and kept well distributed throughout the tub.

That the machine of the Snyder patent, the Maytag machines made under it, and defendant's machines, are intended to and do operate in substantially the same way, is shown by the demonstrations of plaintiff's machines before the Court, by the statements of Plaintiff's wit-
57 nesses, by the General Electric circulars (Pl. Exs. 16, 16A, 16B), and by the testimony of defendant's expert witness, Taggart (R. 411, 412).

4. Previous to the Snyder invention, commercial washing machines generally were of the following types:

(a) Scrub or Rubboard.
(b) Dolly.
(c) Oscillator.
(d) Cylinder.
(e) Vacuum Cup.

In each of these types of machines the washing was done by mechanical means which rubbed, scrubbed, pounded, squeezed, compressed or dragged them around in the tub as a mass, in simulation of the manner in which clothes have for years been washed by housewives on the old-fashioned washboard.

Each of these types of machines were slow in operation, did not satisfactorily clean the clothes, the more dirty parts of which had frequently to be washed by hand on the old-fashioned washboard even after the long rubbing operation in the tub. In each of these machines, and especially with the peg dolly type, which was by far the most extensively used, there was ever present the danger of injury to the clothes and more delicate fabrics could not be washed with them without mutilation.

58 The difficulties incident to the operation of these machines and the ever present detriment to the clothes washed in them, had long been recognized generally and by Snyder for years prior to his invention. The evidence of Snyder's and plaintiff's experience with the dolly and cylinder types, and the prior patents before the Court, show the struggle to improve the operating mechanisms of these

various types of machines since 1809, but this did not relieve the difficulties inherent in the use of these old types.

5. Snyder well recognized the difficulties incident to and inherent in each of the old types of machines, and it was only after discarding completely the manner in which clothes were washed in them that he overcame the struggle for a successful machine which would wash rapidly, cleanly and without detriment to the clothes, and largely by water action, as distinguished from rubbing, scrubbing, pounding, squeezing, compressing and dragging the clothes much as they were rubbed on the old-fashioned washboard.

Snyder, in devising the machine depicted in his patent drawings, specification and claims, had its parts so constructed, arranged and operated as to carry out his new manner of washing. These are embodied in the Maytag machines made under his patent and in defendant's machines.

59 6. As a result of Snyder's numerous experiments commencing in May of 1920, plaintiff put upon the market his new washing machine in February 1922, and abandoned the sale of its previous peg and other dolly and cylinder type machines. For several years thereafter plaintiff enjoyed an exclusive field in the sale of these machines, despite the skepticism of dealers, housewives, the public generally, and the derision of competitors who were selling the old type machines in competition with it.

7. Through demonstrations in homes and elsewhere, dealers and housewives became convinced of the superiority of the Snyder machine over previous types, that it would wash clothes in much less time than any of the previous types and without injury to them, and bought them at a higher price than the old types sold for.

8. Due to the inherent advantages of the Snyder invention as embodied in the plaintiff's machines, and the demonstrations and sale of them throughout the country, they have come to be recognized as a distinct type, now known as the "Gyrator type".

9. The Snyder patent was issued after very careful exam-
60 ination by a number of primary examiners, law examiners, members of the Appeal Board and the Court of Customs and Patent Appeals, during the pendency of the application for the Snyder patent, and its issuance was delayed for over six years by a vigorously contested interference proceeding resulting in a decision in Snyder's

favor by the Court of Customs and Patent Appeals (Unruh v. Snyder, 49 F. (2d) 1038).

10. During the prosecution of the Snyder application the skilled Examiners of the Patent Office had under consideration all of the patents here relied upon by the defendant except the merely cumulative Hermance and Runkel patents, and granted the patent with full knowledge of each of these. This strengthens the usual presumptions arising from issuance of the patent.

11. "The consideration given the Snyder invention and application by the various tribunals of the Patent Office and the Court during these [interference] proceedings and the unusual strain and stress of this searching process strengthens the usual presumption arising out of the issue of a patent." (Judge Byers' Finding of Fact 16).

12. The General Electric Company sold the plaintiff company motors for use on its Gyrator machines made under the Snyder Patent during the entire period from 1922 until the end of 1930 (R. 193-4). Its engineers and other
61 representatives became thoroughly familiar with these Maytag machines through visits to The Maytag Company plant and its experimental department during this period. This was until shortly before it first appropriated the Snyder invention and placed it upon the market in the form of the machines here charged to infringe. Since that time the General Electric Company has claimed for its washing machine sold by defendant the same inherent advantages and method of operation depicted in the Snyder patent.

13. The machine of the Snyder invention has had an unusual commercial record, plaintiff having sold approximately three million machines utilizing it (R. 187).

14. The specifications and claims of the Snyder patent here in suit, are sufficiently full, clear, concise and exact when read in connection with the plain disclosure of the drawings as to enable anyone skilled in the art to manufacture it and to make it operate in accordance with the teachings of that patent.

15. Defendant's answer sets up nine United States, two British and one French Letters Patent, and three alleged prior uses (two by the 1900 Corporation, of Binghamton, New York, and one by Miller Manufacturing Company, Meyersdale, Pennsylvania) to invalidate the Snyder patent.

"None of the prior patents, or alleged prior uses relied upon by the defendant show or disclose a washing machine,"

construction, arrangement of parts or manner of
62 operation disclosed in the Snyder patent drawings and described in his specification and claimed in the claims here in suit, or "any which negative the patentable novelty of any of these claims."

16. Claims 23, 26, and 29 of the Snyder patent, when read in connection with the drawings and specification, are each limited to an impeller mounted for fixed movement and at the bottom of the tub, to the combined structural elements shown in the drawings and referred to in the specification or their equivalents and to the operation described. When thus read they are not anticipated and include within their proper scope defendant's machine.

17. Defendant's expert selected "the Doughty and Davis, the Jardine, the Davis, perhaps the Henin and Hermance," as most closely approaching the described operation of the Snyder patent, and the Davis and Jardine patents as most closely approaching the Snyder construction (R. 430, 433).

The Davis Patent and the Machines Made Under It By the 1900 Company

18. Defendant took the depositions of a number of witnesses now or formerly connected with the 1900 Company, of Binghamton, New York, relative to the construction and operation of these machines, made and sold by that company between the year 1918 and the time when they were abandoned in 1921 or 1922.

63 The machines made under the Davis patent are known as the 1900 Company's Forms 1, 2 and 3 machines. They all operated in the same way. (Dep. Behan pp. 221-224).

Defendant's witnesses Doughty, Behan, Quinn and Davis were familiar with the construction and operation of these machines at the time they were being sold by the 1900 Company. Their testimony conclusively shows that this machine was substantially identical with the structure of the Davis patent and with that of the old rubboard type of machine on the market previous to 1922 and long since abandoned. (Dep. Behan pp. 221-222). In these machines made under the Davis patent, the entire interior or bottom of the tub was corrugated so that the clothes could be rubbed against these corrugations as a mass. The cover was pivotally mounted at one side of the machine so that it could be opened and closed with respect to the tub. (Dep. Doughty p. 175; Behan, p. 222). A square shaft was slidably mounted through the center of this cover. A rubboard, having twelve radially

arranged cleats extending from its outer periphery toward its center, each of which was approximately 7/8 inch high (Dep. Doughty, p. 194,) was secured to the lower end of the slidable shaft and moved up and down with it. This rubboard was of substantially the same diameter as the interior of the tub. In its lowermost position the rubboard was about an inch above the bottom of the tub. Immediately adjacent the cover hinges a motor driven gearing was mounted, whereby
64 the rubboard could be oscillated in the tub when the cover was closed.

The testimony of defendant's witnesses shows that when the clothes were placed in the tub and the cover closed, the rubboard slid down into contact with the clothes (Dep. Doughty, pp. 171-172; Behan, p. 223), that immediately upon the rubboard starting to work, its oscillations and movement of the water incident thereto caused the slidably mounted rubboard to descend into close contact with the upper surface of the mass of clothes and compressed them between the rubboard and the corrugated interior of the tub (Dep. Doughty, pp. 171-179); and that the clothes were washed by rubbing action of the rubboard and the rubbing of the mass against the corrugated interior of the tub. (Dep. Doughty, p. 171; Behan, p. 223). There was poor circulation of clothes, practically none when the machine was ordinarily loaded (Doughty, p. 178).

Defendant's witness Doughty testified that the machine shown in the patent drawings in actual practice would not create the currents described in the Davis patent, for when the rubboard settled down into the clothes the currents described in the patent would disappear (Dep. Doughty 201).

Mr. Doughty confirms his testimony as to the operation of these machines by his letter written Mr. Clark on March 23, 1921, where he states of the Davis machine that its
65 action—

"causes the agitator to sink in the water and restrict the free movement of the clothes,"

and that (Dep. p. 179)—

"The vanes on the agitator when in motion cause the water to flow from the center toward the side of the tub. Consequently, the center is lowered and the agitator, which is only held in position by floating upon the water, or by the supporting effect of the clothes, is drawn down with the result of

compressing the clothes, restraining their free movement and increasing the power required to operate the washer."

Mr. Doughty also testified that in operating the Davis machine the clothes remained in a "state of rest at the center of the tub."

The evidence shows that at the time these machines were being sold the manufacturers stressed the large quantity of clothes that could be handled in a single batch (Dep. Doughty, p. 186; Behan, pp. 235-236).

In referring to the Davis patent, defendant's witness Doughty said that the machine shown in it would not in actual practice create the currents described in it except when the agitator was held up from descending (Dep. Doughty, 201).

Defendant's expert Taggart says with respect to this machine that the clothes are washed, if at all, by rubbing, pounding, speezing and dragging. (R. 446).

66 Defendant's expert demonstrated one of these machines without any clothes in it before the Court, and stated that the rubboard would remain at the top of the water in operation and not descend into the clothes, in the face of testimony of defendant's witnesses to the contrary. Plaintiff later made a demonstration before the Court of two of these machines, one with water only in the tub and the other with a load of clothes in it. In these demonstrations in the machine with only water in it the rubboard moved from its upper limit of movement adjacent the cover to its extreme lower limit of movement, which the evidence shows was about an inch above the bottom of the tub, in less than a minute (R. 748), and in the machine loaded with clothes it went down to within one inch of its lower limit of travel and compressed the clothes between it and the bottom of the tub in less than two minutes, and continued to operate in this position (R. 749-750).

The demonstration of these machines by plaintiff, considered in connection with defendant's own witnesses and the statements made by Mr. Doughty in his letter to Mr. Clark of 1921, shows that in the operation of the machines of the Davis patent the clothes are compressed and rubbed as a mass between the slidably mounted rubboard and the bottom of the tub, and that the clothes are washed in it by the rubbing action of the rubboard and the rubbing of the mass against the corrugated interior of the tub, and in a manner radically different from that described, disclosed and claimed in the Snyder patent.

67. That the machine shown in the Davis patent will not operate or wash clothes in a manner described in its specification, is further shown by the testimony of defendant's fact witnesses, by plaintiff's demonstrations of these machines before the Court, and by the testimony of plaintiff's and defendant's experts. (See Taggert R. 446; Kenerson 760-773).

The construction of the Davis machine with its rubboard slidably mounted in the cover of the machine of substantially the same diameter as the interior of the tub, with its low rubbing cleats, and its operation of compressing and rubbing the mass of clothes between the rubboard and the corrugated interior of the tub with little circulation of water, is radically different from the construction and operation of the machine of the Snyder patent drawings, description and claims in suit, in which the tub has a smooth interior, an impeller mounted for oscillation in a fixed plane at the bottom of the tub, a base for the impeller of substantially less diameter than the interior of the tub, equally spaced blades on the impeller of substantial height and lateral area projecting upwardly therefrom, and a mechanism for operating the impeller at high speed mounted beneath the tub whereby the clothes are washed largely by water action, rolled over and over, kept well distributed throughout the tub in untangled condition and acted upon as individual pieces by the vigorous currents and cross-currents created by the impeller.

The Davis patent was before the various Examiners of the Patent Office who considered it not to disclose or anticipate the Snyder invention.

68 The Jardine British Patent.

19. This is another dolly machine. Its claims relate to mechanism for keeping the clothes from tangling beneath the dolly in the operation of the machine. This of itself indicates that this was a rubbing, pounding, squeezing and dragging type of machine, and defendant's expert so testified. (R. 435).

The dolly of this machine is pivotally mounted on the bottom of the tub, and has its operating shaft extending upwardly therefrom without showing any mechanism for driving it. This dolly has a series of vertical ribs or projections b^2, b^2 throughout its entire height. It has a series of wide vertical ribs marked a^1, a^1 extending from the top of the interior of the tub to a point a short distance above the bottom.

There is not the slighest disclosure or suggestion in this foreign patent for operating the dolly either in a fixed plane or by a reciprocating mechanism mounted beneath the tub. There is no indication in the patent of so operating the dolly as to create velocity of water flow or a vigorous water action or indeed any water action. There is nothing which suggests whether the dolly is to be driven continuously in one direction or for a number of revolutions in one direction and a number of revolutions in the opposite direction. There is no suggestion of any mechanism for reciprocating the dolly through the proper arc for creating vigorous rapid
69 currents of water and the directional flows disclosed in the Snyder patent drawings, specification and claims here in suit. There is no suggestion of washing clothes while substantially suspending them in water by vigorous water action, or washing them largely by water action as distinguished from rubbing, pounding, squeezing, compressing and dragging them, as was done by the well knowr dolly type machines of 1891 and subsequently. There is no suggestion o. intimation in the patent that the vertical ribs on the interior surface of the tub have no functions and do not affect the washing operation. Their presence in the drawings and specification clearly indicates the contrary. There is nothing to indicate or suggest that the only rubbing that occurs is between the clothes and the agitator. The patent is entirely silent as to the character of driving mechanism to be used, whether by hand or otherwise, and no suggestion of any mechanism which could operate it at high speed.

Judge Byers, with respect to the disclosures of the Jardine British patent, well says:

"One can read the Jardine patent closely and often and yet not find any teaching whatever of a device to perform the operation of washing according to what Snyder says he invented. Jardine's instruction was of a means to prevent the mangling of fabrics beneath the disc. The presence of the ribs in the tub, and the necessary squeezing of fabrics against them by the blades of the agitator, is too clearly indicated by this patentee to admit of misunderstanding."

70 The record is absolutely silent as to whether any of these machines were manufactured or sold.

At the trial, defendant's expert made a demonstration of a glass tub machine which he stated corresponded to the Jardine patent. An examination of this demonstration machine, and the testimony, shows that the dolly in it, instead of being pivotally mounted on the tub bottom and operated

from the shaft at the top, as shown in the Jardine patent, was mounted for operation in a fixed plane on a shaft extending upwardly through the bottom of the tub, which projected into a bearing near the top of the dolly. There is nowhere disclosed in the Jardine patent a dolly shaft driven by a pinion mounted beneath the tub, or a rack operatively connected with the pinion by a motor for driving this shaft. In this machine the mechanism for keeping the clothes from tangling beneath the dolly, upon which Jardine secured his patent, was entirely eliminated.

This glass tub machine used in defendant's demonstrations radically changed the structure shown in the Jardine patent by eliminating the very feature upon which Jardine relied when securing his patent, eliminated the drive shaft which extended through the top of the tub, shown in the Jardine patent, reconstructed the drive shaft and the interior of the dolly upon which it was mounted, extended this drive shaft through the bottom of the tub and operated it by a pinion, rack bar and motor mounted beneath the tub, none of which is either disclosed or suggested in the Jardine
71 patent. With this reconstructed machine defendant's expert attempted to so operate it as to create the water action disclosed and described in the Snyder patent. The demonstration of a reconstructed machine is of little probative value.

Under the decisions in this circuit and the Supreme Court of the United States, the Jardine patent is not an anticipation of the Snyder invention.

The Jardine patent was before various Examiners of the Patent Office who considered it not to disclose or anticipate the Snyder invention.

The Miller Machines and Patent.

20. The testimony shows that the Miller machines relied upon as a prior use by the defendant were simply old-fashioned dolly machines with cleats used in place of the conventional pegs. In these machines, as in the Davis machine, the dolly was slidably mounted so that it squeezed and compressed the clothes between the dolly and the corrugated interior or bottom of the tub and dragged the clothes back and forth as a mass.

The defendant's witnesses testified that the operation of these machines is disclosed in the Miller patent No. 738,560 of 1903 and in the Miller Manufacturing Company's cir-

cular. (Miller patent, Pl. Ex. 22; Miller circular, Pl.
72 Ex. 21). These as well as the testimony of defendant's witnesses show that the contemplated and actual operation of them is like the old dolly type machines, and that they do not operate in the manner disclosed, described and claimed by Snyder.

Hermance Patent No. 88,478 of 1869.

21. The Hermance patent shows a wash boiler intended to be put upon the stove for boiling the water with clothes in it. It has a vibrating wheel operated by hand crank above the top of the boiler. Clothes are placed on this wheel for stirring them while boiling them on top of the stove. The purpose of this is to stir up the clothes while they are being boiled preliminary to washing on the old-fashioned washboard commonly used in 1869. The clothes are laid upon the cleats or ribs b, b, of the wheel E, which supports them from the bottom of the tub and holds them up from the main body of the wheel so that the holes through the wheel will not be clogged.

There is nothing in this patent which suggests the construction or operation disclosed in the Snyder patent drawings, specification or claims here asserted.

73 Henin French Patent.

22. The drawings of this patent show a tub having a corrugated interior b. On the interior of this tub is an agitator of substantially the same diameter as the interior of the tub. There is just an operating clearance between its outer periphery and the adjacent interior of the tub. The lattice base of its agitator is made of slats with holes between them as in the ordinary lattice work used under house porches. Secured to the upper portion of this base are four radially arranged cleats. Intermediate of these cleats are four "beaters", ribs or vanes u, each of which has four large holes in it, which are of less width at their widest portion than the length of the cleats t. There is a connecting rod for oscillating the agitator, connected by a shaft h', driven by a crank e', or by a motor through the pulley wheels n' or o'. There is a hand crank on this machine to be used interchangeably with a power pulley mounted on the same shaft. There is nothing in this patent "to indicate that the machine is operated at a different rate of speed by hand or by power". (Taggart R. 470).

The specification states that the seesaw or oscillating movement of the agitator is to be one-third of the circumference of the tub in each direction. The specification says—

"The dimensions of these pulleys (driving pulleys) are such that it is always possible to operate the apparatus by hand or motor, the belt or handle being removed, as the case may be."

74 Claim 4, which shows that the interior disc comprises cross-wooden slats, in combination with wings and ribs, for the purpose of preventing the batch of linen from being packed at the bottom of the tub, plainly indicates that the purpose of the disc, being of substantially the same diameter as the interior of the tub, is to prevent the clothes being washed getting beneath it as they are rubbed and scrubbed by the agitator and dragged against the interior corrugations of the tub in the washing operation, a difficulty always experienced in the rubbing type machines.

The purpose of the large openings in the Henin disc is to cause the clothes to be sucked into them and thereby more firmly grip the clothes as they are beaten and rubbed by the corrugated interior of the tub when they are placed between its corrugated interior and the beaters and above the lattice base.

The Henin patent was considered by the Patent Office (see letter March 24, 1932), and by it held not to anticipate the Snyder invention depicted in claims 23, 26 and 29 here asserted. It does not disclose the Snyder invention.

75 The Doughty and Davis Patent No. 1,496,305, Issued June 3, 1924 and the 1900 Form 4 Machine Made Under it.

23. In the machine shown in the Doughty and Davis patent and as embodied in the Form 4 machine made under it, there is an agitator or rubboard of substantially the same diameter as the interior of the tub mounted at its bottom for oscillation. There is just enough clearance around the circumference of the rubboard to permit it to operate on the interior of the tub. On the upper surface of the rubboard there are six equally spaced triangular rubbing cleats, approximately seven-eighths (7/8") inch in height, grouped about one side of the rubboard base and a wide space left between the nearest two on the opposite side of the base. This rubboard was operated at the same speed as the rubboard machine of the Davis patent (forty oscillations per minute). The testimony of defendant's witnesses shows that this ma-

chine was made to overcome the difficulties incident to the use of the machine of the Davis patent, in which the agitator sunk in the water and restricted the free movement of the clothes, and in which the agitator was "drawn down with the result of compressing the clothes" and "restraining their free movement." (Dep. Doughty, pp. 178-179).

Mr. Doughty eliminated the symmetrical arrangement of vanes of the Davis rubboard and arranged his unsymmetrically. He states his reason (Patent, p. 2, line 11):

76 "The purpose of so arranging the vanes is that we have found that if the agitator surface is symmetrical there is a marked tendency for a single one of the many pieces of laundry in the tub to cling to the agitator, an action which interferes seriously with the efficiency of the machine in washing".

He also states that with symmetrically arranged vanes of the Davis patent there is a tendency—

"to stretch the most available piece of laundry over the surface of the agitator and keep it there."

He further says (p. 2, line 29):

"We have discovered, however, that by arranging the agitator unsymmetrically the equality of the currents is disturbed and as a result the piece of cloth in contact with the agitator will not be retained there but will be moved off to one side of the unequal currents acting upon it."

There is nothing in this patent to suggest or intimate the vigorous flow or action of the water or substantial suspension of the clothes in the water while the washing operation is going on. Mr. Doughty testifies that the purpose sought in the unsymmetrical arrangement of the blades was—

"to cause the clothes to be operated on in an irregular manner and prevent them from remaining in a state of rest at the center of the tub" (Dep. Doughty, p. 180).

and in the use of the unsymmetrically arranged vanes
77 there was

"a more or less quiet zone in the washer created by the lack of the vanes"

and that the outflow between the widely spaced vanes was less than that at other points, so that it made a less movement of the water at the place affected by this wide separation of vanes.

Mr. Doughty testified that the 1900 Company advocated washing as many clothes in these machines as they would hold when washing them, and that it was the general tendency at that time to stress the large quantity of clothes which could be handled in a single operation (Dep. p. 186).

The fact that the rubboard of the Doughty and Davis machine is of substantially the same diameter as the interior of the tub, that it has low rubbing cleats about seven-eighth (7/8") inch high, unsymmetrically arranged for the purpose of obviating the difficulties which are said to be present if used with equally spaced rubbing members, such as disclosed in the Davis patent and that these machines were operated at slow spee shows that it neither embodied the structure nor utilized the operation disclosed, described and claimed in the Snyder patent.

This machine was abandoned by the 1900 Company after it had made approximately 700 of them (a little more than a day's output for that factory). Defendant's expert testifies with respect to this machine that:

> "In that machine clothes are pounded, rubbed, dragged and squeezed in the washing operation" (R. 436).

78 Following its substantial abandonment in 1922, the 1900 Company carried on a large number of experiments with the Maytag gyrator machine in their experimental department, and finally adopted and has sold hundreds of thousands of its gyrator type machine shown in Defendant's Dep. Exhibit 12 (now part of Deft's Exhibit 38). (Dep. Doughty 193), under license of the Snyder patent.

Davis testified, with full knowledge of the gyrator type machine made under the license of the Snyder patent, that the 1900 Company is not manufacturing any machines like its Forms 1, 2, 3, and 4 machines at the present time (Dep. p. 111). (In connection with this Finding, see Judge Byer's Opinion, page 3425 in Pl's Ex. 34).

The Snyder washing machine with its impeller having a base of substantially less diameter than the upper portion of its tub and having blades of substantial height and lateral area and operating this at high speed to impel the necessary amount of washing fluid so vigorously and in such a manner as to substantially suspend the clothes by the water action while washing them, is clearly distinguished from the structure and disclosed operation of the Doughty and Davis machine.

24. The other patents set up in defendant's Answer and the two additional ones offered in evidence by defendant to show the state of the art (Marchand and Foster &
79 Garrison) add nothing to the art already discussed and do not disclose the Snyder invention.

25. A machine purporting to represent the Morse patent was exhibited by defendant's expert at its demonstration. It was the machine which had a handle above each side of the tub for swinging its rubboard member. Defendant's expert said in referring to this machine that the housewife would prefer to use the old-fashioned rubboard or washboard for washing,—"The labor would be less" (R. 373).

26. In the defendant's demonstrations there was little attempt to operate the Snyder or defendant's machine in the manner described and claimed in the Snyder patent and in the General Electric advertisements and circulars. Instead the defendant attempted to show that these machines did not thus operate. The Court was unable to see in defendant's demonstrations many of the actions described by defendant's expert in connection therewith.

27. The testimony taken in open court of the witnesses Bradt, Miller, Stephan, Mooar, Thornton and Mason establish the fact that Snyder reduced his invention to practice in a wooden tub machine, made by Miller under his direction, in May of 1920. The evidence also establishes that this machine was successfully operated in May 1920 to
80 carry out the Snyder invention in the experimental department of The Maytag Company; that during the latter part of May and immediately following it was used successfully to wash clothes at the home of a washer-woman by the name of Mrs. Ellingsworth, in Newton, Iowa; and that Snyder also fully disclosed the invention to these witnesses during May of 1920 and to Mr. Mason on January 21, 1921, and subsequently. After making this machine, Mr. Snyder carried on a series of experiments with his invention.

Before October 1921 Mr. Miller, at Snyder's request, revamped one of The Maytag Company's Model 70 aluminum tub dolly type machines. He incorporated in it an impeller substantially like that shown in the Snyder patent drawings and operated it by a shaft extending downwardly through the bottom of the tub. This shaft was driven through a pinion and rack bar from a power leg taken from the Model 70 machine, by a motor also mounted beneath the bottom of the tub. This machine (Pl. Ex. 8a) was used for washing clothes at Mrs. Ellingsworth's place in October 1921, in the presence

of a number of witnesses and resulted in Snyder's securing the consent of Mr. Fred L. Maytag, President of The Maytag Company, and its Board of Directors, to proceed with the manufacture of these machines for sale. This was followed by the completion of four of these machines made in close resemblance to the Snyder patent drawings. Sales of these machines immediately followed. Plaintiff has since that time sold only this type of machine. It has abandoned its previous old types.

81 Snyder's reduction to practice and use of his invention in May of 1920 was more than eight months before the earliest date claimed by defendant for the disclosure or use of the 1900 Company's Form 4 machine made under the Doughty and Davis patent. The Doughty and Davis machines can not be used as an anticipation of Snyder.

28. Each claim of a patent is for a separate invention. The fact that plaintiff has filed a disclaimer as to claims 1 and 38 is no admission on the part of plaintiff that the claims disclaimed were anticipated or were invalid.

Claim 39 is for a separate invention from claim 38 in that claim 39 includes as part of its operation the step of causing the fabrics to be "freely moved about", whereas that step is not specified in Claim 38. This feature of causing the fabrics to be freely moved about in order to evenly distribute them in untangled condition and rapidly roll them over is one of the distinguishing features of the claims here asserted.

Defendant contends that claim 20 is substantially identical with Claims 23 and 26 held invalid in the Second Circuit. As the plaintiff is here asserting Claims 23 and 26, there is no occasion for filing a disclaimer as to Claim 20, and further because "no competent court has declared" Claim 20 invalid (Ensten case, 282 U. S. 445, 449). Claims 20 and 39 are not in issue in this case.

82 Defendant's contention that the Snyder patent is invalid because the District Court in New York (Judge Cox), following the decision of the Court of Appeals, held claims 23 and 26 of the Snyder patent invalid in the Harley and Easy cases, is without force for there is an appeal now pending from the decree of Judge Cox and the plaintiff is still attempting to vindicate its position with respect to the Snyder invention in the United States Circuit Court of Appeals for the Second Circuit.

Conclusions of Law.

1. The Court has jurisdiction of the subject matter and of the parties.

2. The title of the patent in suit is vested in the plaintiff and plaintiff may maintain suit to restrain infringement of it.

3. It is the duty of this Court to determine for itself the questions of validity and infringement of the Snyder patent here in suit, on the record before it, notwithstanding the fact that in a previous litigation between different parties the Court of Appeals of another circuit has held two of the claims in controversy invalid. In doing this it should and has given careful consideration to the decision of that court (Triplett vs. Lowell, 297 U. S. 638, 644).

83 4. In considering the question of whether a foreign patent anticipates a patent in suit the—

"foreign patent must disclose the invention in such full, clear and exact terms as to enable any person skilled in the art to practice it without the necessity of experimentation". (Donner vs. Sheer Pharmacal Corp., 64 F. (2d) 217, 220, and cases there cited).

5. An

"invention or discovery relied upon as a defence, must have been complete, and capable of producing the result sought to be accomplished [by invention of the patent in suit]; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him." (Coffin vs. Ogden, 18 Wall. 120, 124; Cantrell vs. Wallick, 117 U. S. 689; Drum vs. Turner, 219 Fed. 188 (C. C. A. 8).

6. Building up

"anticipation by changing and combining parts of structures of prior patents cannot be indulged." (Wisconsin-Minnesota Gas & Elec. Co. vs. Hirschy Co., 28 F. (2d) 838, 841 (C. C. A. 8).)

7. The claims of a patent should be interpreted in the light of the drawings and specifications (Eibel Co. vs. Paper Co., 261 U. S. 45; Ottumwa Box Car Loader Co. vs. Christy, 215 Fed. 362 (C. C. A. 8)) and they should be so construed as to include the novel features and advantages inherent in the invention whether prescribed in the claims or not.

8. A disclaimer filed as to certain claims of a patent is no admission or confession on behalf of plaintiff that the claims

disclaimed are anticipated or invalid, and so long as
84 the patentee continues an attempt to vindicate his position with respect to any claims held invalid or with respect to other claims in the patent asserted, there is no necessity for filing a disclaimer.

9. Claims 23, 26 and 29 of the Snyder patent No. 1,866,779 are valid and infringed by defendant's washing machines in controversy.

10. Plaintiff is entitled to a perpetual injunction restraining said defendant, its privies and employes and those in active concert or participating with them from infringing said claims, and to recover the profits and damages resulting from the infringement as determined by an accounting, together with the costs of this suit.

Respectfully submitted,

PARKINSON & LANE,
Attorneys for Plaintiff.

Nelson E. Johnson,
Wallace R. Lane,
Clarence J. Loftus,
Of Counsel.

Dated: December 11, 1937.

Filed in the United States District Court Jan. 26, 1938.

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85 (Defendant's Suggested Findings of Fact and Conclusions of Law.)

The issues in the above cause having duly come on to be heard by this Court at a stated term, the following findings of fact and conclusions of law are made and filed pursuant to Equity Rule Number 70½.

Findings of Fact.

1. Plaintiff, The Maytag Company, is the sole owner of the Snyder letters patent in suit, Number 1,866,779, for washing machine, issued July 12, 1932, claims 23, 26 and 29 of which are here asserted. Plaintiff's Exhibit 9 is a specimen of machines made by the plaintiff embodying the structure shown in said patent. Plaintiff's Exhibits 10 and 11
86 are specimens of other machines made by the plaintiff embodying modifications upon the structure shown in said patent. Plaintiff's present machine employs an agitator substantially like that shown in plaintiff's circular, Defendant's Exhibit 11.

2. Defendant, General Electric Supply Corporation, is a corporation organized and existing under the laws of the State of Delaware and has an office and a regular and established place of business in Kansas City, Missouri within the Western Division of the Western District of Missouri, where it committed the acts complained of in this suit.

3. Defendant, subsequent to notice of alleged infringement of the Snyder patent in suit and before the filing of this suit, sold washing machines of which plaintiff's Exhibit 12 is a specimen.

4. The Circuit Court of Appeals for the Second Circuit, by its opinion rendered November 30, 1936 in the case of The Maytag Company vs. Brooklyn Edison Company, held claims 23, 26 and 38 of said Snyder patent in suit anticipated by the prior art and invalid.

5. Plaintiff, subsequent to the commencement of this suit, entered in the U. S. Patent Office its disclaimer of claims 1 and 38 of said Snyder patent in suit, setting forth in
87 said disclaimer that said Snyder in said claims 1 and 38 had claimed more than that of which he was the original or first inventor.

6. The District Court for the Southern District of New York, by its decree dated June 8, 1937 in the suit of The Maytag Company vs. Easy Washing Machine Corporation, held claims 23, 26 and 29 of the said Snyder patent in suit anticipated by the prior art and invalid.

7. The evidence presented by defendant herein shows that machines constructed in accordance with the Doughty & Davis patent Number 1,496,305 (application filed April 8, 1922) and the 1900 Form 4 machines operate in the same manner as machines constructed in accordance with the Snyder patent in suit.

8. The evidence presented by the defendant shows that machines constructed in accordance with the Davis patent Number 1,240,826 operate in the same manner as machines constructed in accordance with the alternative described in the Snyder patent with the impeller located at the top of the tub.

9. The evidence presented by the defendant shows that machines constructed in accordance with the Jardine British patent Number 18,202 of 1891 operate in the same man-
88 ner as machines constructed in accordance with the disclosure of the Snyder patent.

10. The smooth-walled machine manufactured by William S. Miller and sold in November, 1919, (defendant's Exhibit 19) operates in the same manner as the alternative machine described in the Snyder patent with the impeller located at the top of the tub.

11. The 1900 Form 3 machine (defendant's Exhibit 20), sold January 1, 1920, operates in the same manner as the alternative machine described in the Snyder patent with the impeller located at the top of the tub.

12. Each of the machines of the prior art mentioned above operates to produce a vigorous movement of the washing fluid in a predetermined course which, in the case of the Doughty & Davis patent, the 1900 Form 4 machine, and the Jardine British patent, is outward from the base of the impeller, upward along the walls of the tub, inward across the top of the tub and downward at the center to the base of the impeller; and, in case of the Davis patent, the 1900 Form 3 machine, and the Miller machine, is outward at the top of the tub,
89 downward along the walls of the tub, inward across the bottom of the tub and upward at the center to the underside of the impeller. These movements of the washing fluid are the same as those described in the Snyder patent. In each of the machines of the prior art the movements thus imparted to the washing fluid by the impellers are, in turn, imparted to the clothes to be washed. Under similar conditions of loading, the machines of the prior art and the machine of the Snyder patent operate in exactly the same way, differing, if at all, only in the degree of vigor and the rapidity of the movement imparted to the clothes to be washed.

13. In each of the machines of the prior art and likewise in the machine of the Snyder patent, increase in the loading slows down the rate of the movement imparted to the clothes and increases the contacts between the clothes and the impeller.

14. In each of the machines of the prior art, and in the machine of the Snyder patent, the clothes are washed partly by water action and partly by rubbing of the clothes in contact with the blades of the impellers.

15. If there be any difference between the operation of machines constructed in accordance with the prior art
90 above mentioned and the operation of the machine described in the Snyder patent, it is a difference in degree only and not in kind.

16. In all the machines of the prior art mentioned above and of the Snyder patent in suit the vigor of the agitation of the washing fluid is increased as the speed of oscillation of the impellers is increased, and the rate at which the clothes roll over is decreased as the load is increased.

17. The evidence presented by the plaintiff is insufficient to establish any date of alleged invention for Snyder sufficiently early to antedate the development, construction, testing and marketing of the 1900 Form 4 machine and the Doughty & Davis patent.

18. The Snyder patent in suit is anticipated by the Davis patent Number 1,240,826, the Doughty & Davis patent Numebr 1,496,305, the Jardine British patent Number 18,202 of 1891, and by the commercial machines made and sold by the 1900 Company of Binghamton, New York, known as Form 3 and Form 4 machines, and by William S. Miller, of Meyersdale, Pennsylvania, known as the Seamless Tub machines.

19. Any attempted interpretation of claims 23, 26 and 29 of the Snyder patent in suit to distinguish them from
91 the prior art likewise distinguishes them from the defendant's machine.

20. The first machines marketed by the plaintiff under the Snyder patent in suit were sold in April, 1922.

21. Machines such as plaintiff's Exhibits 10 and 11, marketed by the plaintiff, have carried the statutory patent notices of a large number of patents in addition to the Snyder patent in suit.

22. Plaintiff has pushed the sales of its machines, such as plaintiff's Exhibits 9, 10 and 11, through the efforts of a large sales organization and the expenditure of millions of dollars for advertising. Plaintiff has stressed as "selling points" of such machines many features having no connection with the Snyder patent in suit. Plaintiff introduced its machines, such as plaintiff's Exhibit 9, by a "home demonstration" campaign, a new and unusual method in the sale of washing machines.

23. By August, 1922 the plaintiff found it necessary, because of complaints, to provide its machines with tubs recessed at the bottom to accommodate the agitator, a feature not shown in the Snyder patent in suit but covered by the Snyder patent No. 1,506,783.

92 24. In 1924 the plaintiff found it necessary, because of leakage trouble, to incorporate in its machines a high center post agitator with a drive shaft extending upward

through a standpipe secured in the bottom of the tub, a feature not shown in the Snyder patent in suit.

25. Other factors than the Snyder patent in suit are shown to have contributed materially to the plaintiff's sales of washing machines, and evidence of such sales is of little aid on the question of patentable novelty of the claims in suit.

26. Claims 23, 26 and 29 of the Snyder patent No. 1,866,779 are invalid and void and by reason of anticipation by the prior art and for lack of invention.

27. The evidence offered by the plaintiff in this case in support of its contention that a patentable invention is described and claimed in the Snyder patent and claims in suit does not differ in substance from that which was submitted to the Circuit Court of Appeals for the Second Circuit in the case of The Maytag Company vs. Brooklyn Edison Company.

93 Conclusions Of Law.

1. United States Letters Patent to Snyder 1,866,779 are invalid and void as to claims 23, 26 and 29 thereof.

2. The defendant has not infringed any valid claims of said patent to Snyder.

3. The bill of complaint is dismissed with costs to the defendant.

....., United States District Judge.

Kansas City, Mo.
Dated .....

Filed in the United States District Court Jan. 26, 1938.

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94 (Defendant's Additional Suggested Findings of Fact and Conclusions of Law.)

Additional Findings of Fact.

28. Claim 39 of the Snyder patent in suit is substantially identical with Claim 38. On February 23, 1937 plaintiff entered its disclaimer in the Patent Office of claim 38 admitting that therein Snyder had claimed more than that of which he was the original or first inventor. Plaintiff has not disclaimed claim 39.

29. The delay of plaintiff in disclaiming claim 39 is unreasonable and the entire Snyder patent in suit is invalid and void therefor.

95 30. By claim 20 of the Snyder patent in suit the patentee claimed more than that of which he was the original or first inventor in that he claimed therein subject-matter disclosed in the patent to Davis No. 1,240,826, issued September 25, 1917.

31. By the decision of the Circuit Court of Appeals for the Second Circuit on November 30, 1936 in Maytag vs. Brooklyn Edison plaintiff was fully informed that claim 20 covers more than that of which Snyder was the original and first inventor but plaintiff has taken no steps either to vindicate the validity of claim 20 or to disclaim it.

32. The delay of plaintiff in disclaiming or attempting to vindicate claim 20 is unreasonable and the entire Snyder patent in suit is invalid and void therefor.

33. Claims 23 and 26 of the Snyder patent in suit were held invalid by the Circuit Court of Appeals for the Second Circuit in Maytag vs. Brooklyn Edison. Plaintiff elected to relinquish the privilege of disclaimer as to these claims and proceeded to relitigate them in another court, to-wit, in the United States District Court for the Southern District of New York, in the cases of Maytag vs. Easy and Maytag vs. Hurley. Upon such relitigation claims 23 and 26 were
96 likewise held invalid.

34. The entire Snyder patent in suit is invalid and void because of plaintiff's failure to disclaim or to vindicate its contention with regard to claims 23 and 26.

35. Defendant's machines models 2-G and 3-G are manufactured by the Easy Washing Machine Corporation of Syracuse, New York and such machines are immune from attack by plaintiff upon claims 23, 26 and 29 of the Snyder patent in suit by reason of the final decree entered in the suit in the Southern District of New York by plaintiff against said Easy Washing Machine Corporation.

36. Plaintiff secured the allowance of claims 23, 26 and 29 of the Snyder patent in suit in the Patent Office by limitations therein to "substantially suspending the materials in the fluid while being washed" and representations and arguments that such limitations defined machines which wash "by water action alone" and thereby differentiated patentably from prior art machines. The plaintiff is barred thereby from asserting any interpretation of claims 23, 26 and
97 29 to cover any machines except those which wash by water action alone or substantially alone.

37. Defendant's machine is shown by the evidence herein to wash partly by water action and partly by rubbing as do the machines of the prior art.

38. Defendant's machine does not infringe claims 23, 26 and 29 of the Snyder patent in suit.

39. Claims 23, 26 and 29 derive from claims inserted by the plaintiff for the first time in the application for the Snyder patent in suit by amendment filed in the Patent Office January 26, 1932, more than two years after machines exactly as described in said application had been put into public use and on sale by the plaintiff. No claims of comparable subject matter appeared in said application until after more than two years of such public use and sale by the plaintiff.

40. Claims 23, 26 and 29 of the Snyder patent in suit are invalid and void because not presented until after more than two years public use and sale by the plaintiff.

98 Additional Conclusions of Law.

1. United States Letters Patent to Snyder 1,866,779 are invalid and void in entirety.

2. Defendant's machines models 2-G and 3-G are immune from attack by the plaintiff.

3. Defendant has not infringed any claim of said patent to Snyder.

4. The bill of complaint is dismissed with costs to the defendant.

.....
United States District Judge.

Kansas City, Mo.

Dated .....

Filed in the United States District Court Jan. 26, 1938.

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99 (Transcript of Proceedings on Settlement of Decree.)

Transcript Of Proceedings in the Chambers of Honorable Merrill E. Otis, Judge, on February 8th, 1938, in re form of decree in the above-entitled cause.

Appearances.

For the Plaintiff: Mr. Wallace R. Lane, Mr. Nelson E. Johnson.

For the Defendant: Mr. Lawrence Bristol, Mr. Roy P. Swanson.

(Counsel presented the form of decree to the Court and after hearing argument from counsel, and reading briefs prepared by them, the following occurred:)

The Court: I have considered the several matters that were presented and shall rule on them now. First of all I shall rule the objections to the form of decree which was submitted by Mr. Lane and I shall comply with Mr. Bristol's request that they be ruled seriatum in the order in which they were presented.

Anticipating what I shall say upon the other matter I will say that I propose to grant a supersedeas in this case and that, I think, takes away something from the objections to the form of decree; that is, it makes it unnecessary to give extended consideration to some of them now. In the event the Court of Appeals should affirm the District Court and a permanent decree should be entered these objections can be again considered. Now, I shall rule on them in the order in which they are mentioned in the brief.

Objection Number 1, to the proposed form of decree is that it fails to except from the operation of the decree washing machines manufactured by the Easy Washing Machine Company and Hurley Machine Company. I have no doubt
100 at all as to the rule of law relied on in connection with that objection by Mr. Bristol. I feel somewhat confident from my examination of his brief that that is the rule of law. I think, however, it is unnecessary to modify the decree in the respect challenged by this objection. The reasons for that conclusion are these: First, I have already said a supersedeas will be granted so that the question has no immediate practical importance. In the second place, the challenge is to the form of decree, not to the Findings of Fact—the Findings of Fact might have been challenged either by motion to modify them or by petition for rehearing, neither of which has been presented. The decree follows the Findings of Fact in this particular so that I think I should not modify the decree which is in accordance with the facts found by the evidence, there being no objections to the Findings of Fact as such.

In the third place I suppose that in any decree of any court impliedly is written all of the applicable law and that this decree must be construed in the light of the applicable law, including that rule of law cited by Mr. Bristol. I think that law is already in the decree and does not need to be embodied in so many words. So much for objection Number 1.

Objection Number 2, that the decree awards costs to the plaintiff already has been taken care of,—that provision of the decree has been withdrawn. I think it would not become more clear than it is now if it affirmatively provided that the plaintiff is not entitled to collect costs; that the plaintiff is not awarded costs is the necessary conclusion from the language of the decree.

The third objection is to various words and phrases in the decree. I have taken the liberty of designating those objections as 3 A, 3 B, 3 C and so forth. They are not so
100a designated in the briefs not otherwise designated so they can be identified.

3 A is to that part of the decree which recites that the Snyder patent is good and valid, particularly as to the asserted claims 23, 26 and 29. I think that objection is well taken. [Northing] was said in the case concerning any other claims than Claims 23, 26 and 29. Presumptively they are valid but there is no reason why that presumption should be incorporated in a decree when it was stated to the court at the beginning of the trial that only Claims 23, 26 and 29 were involved and they were the only ones that were considered by the court. I so modify, therefore, the form of the decree which now reads as submitted "that the patent in suit, being United States letters Patent No., and so forth, dated July 12th, 1932 for washing machines granted to Howard F. Snyder as assignor to the Maytag Company is good and valid particularly as to the claims asserted." I shall so modify it as that it will read "that the patent in suit and so forth granted to Howard F. Snyder and so forth is good and valid as to the claims asserted." I strike out the word "particularly".

Mr. Lane: I shall not ask for an exception to that, your Honor.

The Court: Very well. Objection 3 B concerns the use of the word "elsewhere" at page 2 line 1 of the proposed decree. That objection is overruled. My recollection of the evidence is that the decree in the form in which it was prepared is amply supported.

Objection 3 C concerns the use of the word "use" at page 2 line 1 of the Plaintiff's Decree. As the Decree is suggested it finds that the patent has been infringed by the use and sale of washing machines. Now, the argument in support
101 of the objection is that there was no evidence that there was any use by the defendant, General Electric Supply Corporation. The word "use" may have, in the ter-

minology of the patent lawyers, some restricted significance. I do not know that it has or does not have. Undoubtedly, however, "sale" is one form of use and therefore I think the word is [property] employed here.

Objection 3 D refers to the fact that the Decree uses the language in connection with the injunction "enjoined from selling and so forth Model A W 19 and other models illustrated in evidence by Plaintiff's Exhibits" and then certain exhibit numbers are set out. That part of the decree follows the Findings of Fact and the objection is overruled.

Objection 3 E is to the use of the word "perpetual" instead of the word "permanent" in connection with the Decree of injunction. I have always found that the word "perpetual" is used in the phrase "perpetual injunction". Perhaps it is not so accurate a word as the word "permanent" but the objection is not sufficiently serious to be sustained, I think.

Objection 3 F is to the use of the word "privity" in line 3 of the second paragraph in the connection in which it is used there and Objection 3 G is to the use of the phrase "or part thereof" and the phrase "from in any respect infringing upon said Snyder Patent or aiding or abetting or in any way contributing to the infringement thereof" in the second paragraph of the proposed decree. I have considered those objections and overrule them without any special explanation.

To each of the rulings on the objections which have been made by counsel for the defendant if the ruling was adverse to the defendant the defendant is allowed an exception.

Mr. Bristol: May I have an exception to your re-
102 marks "no objection has been made to the Findings of Fact." That, of course, is not necessary for the purpose of appeal and I do not want anything to appear here which might be argued by my learned adversary to indicate that I have acquiesced in those Findings.

The Court: Certainly that objection is allowed. I had not the slightest idea that you had acquiesced in the Findings but I thought the matter should have been formally mentioned if it was desired to attack the Findings as distinguished from the Decree.

The other matter that was submitted this morning was the application of the defendant for supersedeas pending appeal, in the form of a motion for supersedeas. My ordinary practice is, and I think I told Mr. Swanson that when he con-

sulted me about this setting, not to suspend an injunction which I issue. The theory that I have for that practice is that I do not issue an injunction unless I believe it is rightfully issued and if I believe it is rightfully issued I believe I ought to stand by it and let some other court say it was wrongfully issued if it was wrongfully issued. This situation, however, is not the usual situation. It is on that account that I sustain this motion for supersedeas and an exception is allowed to the plaintiff. In this case a Court of Appeals, a Court of much more authority and dignity than the District Court for the Western District of Missouri or any other District Court, has reached a conclusion different from the conclusion which was reached by this Court. I think the conclusion which was reached here was the right conclusion but I have certainly sufficient respect for the opinion of the United States Circuit Court of Appeals to believe that I ought to suspend an injunction until the Court of Appeals for
103 this Circuit has had a chance to pass upon the questions involved.

Mr. Lane: We make no exception to that ruling at all, your Honor.

The Court: The motion therefore is sustained, the only question that remains is the question of bond. The defendant has said it is willing to give a bond in any reasonable amount.

(Thereupon there was colloquy between Court and counsel as to the amount of the bond.)

The Court: I must assume, of course, although were it not for this affidavit and Mr. Brown's presence it would be very difficult for me to assume it, that the General Electric Supply Corporation makes a profit of only forty-six cents on these machines. I think they ought to be glad to get out of that business if that is all the profit they make. I shall fix the amount of the bond upon the theory that thirty thousand machines now sold by the defendant would be sold by the plaintiff in 1938 and I shall multiply that number by the maximum royalty referred to by Mr. Lane, $2.50. The bond will be $75,000.00.

Now there remains the matter of signing this Decree which I shall sign and while there will be no use for the services of a Master for a long time, if ever, I am going to appoint a Master, Kenneth Fligg.

Mr. Lane: I do not understand your Honor is staying the accounting?

The Court: No, I am not staying the accounting.

Mr. Bristol: My application includes that and it seems to me that it is eminently proper that the accounting should be stayed.

Mr. Lane: I think we are entitled to preliminary discoveries on the facts.

The Court: I spoke hastily a moment ago that the order did not suspend the accounting. I suspect it does. I
104 would have thought it did and you say it does.

Mr. Bristol: It is intended to. It is a grave error if it is not.

The Court: I think it should be suspended because it may not be necessary to have an accounting.

(These were all the proceedings and the Court signed the Decree.)

Filed in the United States District Court Feb. 8, 1938.

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105 (Decree, February 8, 1938.)

This cause having been brought on for final hearing upon the pleadings and proofs, and after hearing arguments of counsel and considering briefs submitted on behalf of both parties, it is now Found, Adjudged and Decreed:

First: That the patent in suit, being United States Letters Patent No. 1,866,779, dated July 12, 1932, for "Washing Machine", granted to Howard F. Snyder, as assignor to The Maytag Company, is good and valid as to the claims asserted (23, 26 and 29) and is the property of the plaintiff; that said Letters Patent in respect to all the claims included in the charge of infringement, being claims 23, 26 and 29, has been infringed by the defendant, the General Electric Supply Corporation, a Delaware Corporation, having an office and an established place of business at Kansas City, Missouri, within the Western Division of the Western District of Missouri and elsewhere, by the use and sale of washing machines known as General Electric Washing machines, "model AW 19 and other models" (illustrated in evidence by plaintiff's exhibits 12, 12a, 12b, 16, 16A, 16B, 16C, 16D, 16E and 16F).

Second: That a perpetual injunction issue in due form of law against said defendant, the General Electric Supply Corporation, enjoining it and those in privity with it, their officers, agents, servants, employees and attorneys and those in active concert or participating with them and each of them, from directly or indirectly manufacturing, selling, using,

advertising or offering so to do, any washing machine or part thereof infringing claims 23, 26 and 29, or either of them, of the Snyder patent No. 1,866,779, dated July 12, 1932, or any device embodying or utilizing the same, and particularly General Electric washing machines, "model AW
106 19 and other models" (illustrated in evidence by plaintiff's exhibits 12, 12a, 12b, 16, 16A, 16B, 16C, 16D, 16E and 16F), and from in any respect infringing upon said Snyder patent or aiding or abetting or in any way contributing to the infringement thereof.

Third: That the plaintiff recover of defendant the profits, gains, savings and advantages which it has derived by reason of the aforesaid infringement and the damage which the plaintiff has sustained by reason of said infringement; that this cause be referred to Kenneth Fligg, as Master of this court, to take and state an accounting of said profits, gains, savings, advantages and damages and assess the same, and report thereon pursuant to the statutes and the equity rules in such cases made and provided.

Dated: Feb. 8, 1938.

MERRILL E. OTIS,
United States District Judge.

Filed in the United States District Court Feb. 8, 1938.

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107 (Motion of Defendant to Supersedeas Pending Appeal.)

Now Comes The Defendant, General Electric Supply Corporation, and moves the court for an order and supersedeas suspending, pending appeal, the provisions as to injunction and accounting contained in the interlocutory decree entered herein pursuant to the memorandum opinion of this court filed January 26, 1938, and respectfully shows and states:

1. Defendant's counsel have been instructed to take as promptly as possible and to prosecute vigorously an appeal to the Circuit Court of Appeals for the Eighth Circuit from the interlocutory decree entered herein.

2. Defendant is able and willing to make and file a supersedeas bond in such amount as is reasonably necessary to protect the plaintiff against any loss it might sustain during the period of the supersedeas by reason thereof.

3. As appears by the attached affidavit of LeRoy Link, defendant's treasurer, and the financial statement submitted

therewith, defendant is financially responsible and able to answer in damages if the holding of liability for infringement of the Snyder patent is affirmed on appeal.

4. Unless the injunction is superseded pending appeal, defendant would suffer irreparable damage and injury if the Circuit Court of Appeals should decide that defendant is legally free to sell the devices now held to infringe, since defendant could have no redress for loss of sales or disruption of its organization during the period enjoined.

5. Unless the Circuit Court of Appeals reverses the decision of this Court, the question whether the Snyder patent 1,866,779 in suit should be held valid to cover machines such as are here involved, will have to be passed upon ul-
108 timately by the Supreme Court of the United States because of the conflicting decision of the Circuit Court of Appeals for the Second Circuit in Maytag vs. Brooklyn Edison, 86 F. (2d) 628.

Wherefore defendant respectfully prays for an order and supersedeas in the form submitted herewith suspending, pending hearing and determination of defendant's appeal and the further order of this court, the injunction and accounting directed in the interlocutory decree herein, and for such other and further relief as to the court may seem just and proper in the premises.

Dated, February 8, 1938.

GENERAL ELECTRIC SUPPLY CORPORATION,
By Michaels, Blackmar, Newkirk,
Eager & Swanson,
Attorneys for Defendant.

Affidavit Of LeRoy Link.

State of Connecticut,
County of Fairfield—ss.:

LEROY LINK, being first duly sworn, deposes and says:

I reside at Bridgeport, Connecticut; am now and have been for more than eight years last past treasurer of the General Electric Corporation, defendant in the above suit.

Counsel for the defendant have been instructed by defendant's officers to proceed promptly with an appeal from the decree to be entered herein pursuant to the opinion filed herein on January 26, 1938 by Judge Merrill E. Otis in the Western Division of the Western District of Missouri.

I am familiar with the financial condition of the defendant corporation. To the best of my knowledge and belief, the attached financial statement (which is the latest available statement) truly sets forth the condition of the defendant as
109 of November 30, 1937; and there have been no material changes in defendant's financial status or condition since the said date, except the payment of a dividend of $525,000. on December 28, 1937.

Defendant is able and willing to make and file such bond with good and sufficient security as reasonably may be necessary to the protection of the plaintiff for the period of the supersedeas, if the decree herein shall be affirmed.

Prior to July 12, 1932, the date of issuance of the Snyder patent in suit, defendant commenced to sell electric washing machines generally similar to those found by this court to infringe the patent in suit, and has been continuing such business ever since. It has a substantial investment in warehouse and salesroom space, owned or under long term lease, and in inventory of washing machines in stock but unsold.

Unless the provision for injunction in the interlocutory decree herein be suspended pending appeal, the defendant's business in washing machines will be arrested with the inevitable result of serious loss of investment, idleness of employees for whom defendant because of presently existing recession of business has no other work, and frozen inventory of washing machines which the defendant is forbidden to sell.

If the decree to be entered herein should be reversed on appeal and the right of the defendant established to carry on the business in which it has long been engaged, some years of effort and large expenditures of money would be required to restore the defendant to the position which it now occupies in its washing machine business, for all of which the defendant would have no redress.

Wherefore it is respectfully requested that the status
110 quo be preserved pending appeal by suspension of the injunction and accounting upon terms which are reasonable and just in the circumstances.

LEROY LINK.

Subscribed and Sworn to before me this 4th day of February, 1938.

(Seal) B. J. STRAIN,
Notary Public

My commission expires January 31, 1941.

111 General Electric Supply Corporation
Consolidated Balance Sheet
November 30, 1937.

Assets	
Fixed assets:	
First cost	$ 1 281 337
Normal deprec. entered in expenses	747 185
General Plant Reserve	534 151
Net book value	1
Investments, net	138 777
Current assets:	
Merchandise	11 630 745
Notes and acceptances receivable	237 487
Sundry receivables	547 681
Accounts receivable	8 763 544
Doubtful receivables	398 447
Cash	628 461
Income receivable accrued	57 629
Total current assets	22 263 994
Deferred charges	604 348
Total assets	$23 007 120
Liabilities And Capital	
5% Certificates	$ 381 650
Current liabilities:	
Notes payable	7 500 000
Accounts payable	3 952 526
Other current liabilities	1 261 982
Total current liabilities	12 714 508
Reserves for self insurance, pensions, etc.	467 210
Working reserves:	
For losses on merchandise	787 470
For merchandise cost adjustments	847 336
For losses on receivables	1 263 813
For miscellaneous expenditures	417 765
Total working reserves	3 316 384
Deferred credits to income	4 791

Common stock and surplus:	
Common stock (authorize 160,000 shares no par value; issued 150,000 [chares])	4 000 000
Surplus	2 122 577
Total common stock and surplus	6 122 577
Total liabilities and capital	$23 007 120

L. R. LINK, Treas.

112 • • • • • • • • •

(Form of Order in blank annexed to Motion for Supersedeas Pending Appeal Omitted at this place Pursuant to Stipulation of Counsel at Marginal Page a of this Printed Record.)

Filed in the United States District Court Feb. 8, 1938

Affidavit of Ralph J. Brown.

State of Missouri,
County of Jackson—ss.:

113 RALPH J. BROWN, being duly sworn, deposes and says:

I reside at Milford, Connecticut, and am manager of home laundry equipment sales for General Electric Supply Corporation, defendant in the above entitled suit. Home laundry equipment includes washing machines such as General Electric washing machine Model AW-19 held by this court to infringe the Snyder patent 1866779 in suit. I make this affidavit in support of defendant's motion for supersedeas of the injunction pending appeal and the determination of the amount of the bond to be required as a condition of supersedeas.

The business of the defendant is the wholesale distribution of various products which it purchases from manufacturers.

From the results of defendant's home laundry equipment business for 1937, the following figures are presented as showing the proceeds of defendant's washing machine business on an average unit basis:

Average invoiced selling price, per unit	$46.00
Average invoice cost, f. o. b. point of manufacture, per unit	$38.47

Freight from point of manufacture to point of distribution	1.10	
Cartage in and out receiving and shipping	.97	
Cost of selling	3.40	
Interest, insurance, taxes and repair service	.96	
Bad debts and interest on accounts receivable	.64	
Direct expense		$45.54
Margin after direct expense,		.46

The above listed items of expense are all directly attributable to the washing machine business and do not include any allocation of general expenses. The margin of 46 cents
114 per unit after direct expenses must take care of proper allocations for rental of warehouse space, labor for warehouse maintenance and handling, general overhead expense, federal taxes, and profit if any. In the last two years defendant's washing machine business is estimated as having no more than broken even.

In 1937 the defendant sold something less than 40,000 washing machines, including Models 2G and 3G, which are manufactured by Easy Washing Machine Corporation.

Sales by the defendant in the last two months of 1937 were at a decidedly slower rate than in the early part of the year, reflecting the current recession of general business.

RALPH J. BROWN.

Subscribed and sworn to before me this 8th day of February, 1938.

My commission will expire January 31, 1939.

MABEL B. KILE,
(Seal) Notary Public in and for said County and State.

Filed in the United States District Court Feb. 8, 1938.

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115 (Order directing that Injunction and Accounting provided for in Decree be superseded and suspended pending Appeal in Appellate Court.)

This Matter came on for hearing upon the motion of defendant General Electric Supply Corporation for supersedeas, pending appeal, of the injunction and accounting di-

rected by the interlocutory decree made herein on February 8, 1938, and was argued by counsel; and thereupon it was

Ordered And Adjudged that the injunction and accounting provided for in the interlocutory decree made herein February 8, 1938 be and they hereby are superseded and suspended, pending the hearing and determination of defendant's appeal from the interlocutory decree and until further order of this court, upon the following conditions:

1) That defendant make and file within ten days from the date of this order a supersedeas bond in the amount of $75,000, with good and sufficient security to be approved by the court, that the defendant shall prosecute its appeal to
effect and answer all profits, damages and costs if it
116 fail to make its plea good;

2) That the defendant promptly take and vigorously prosecute its appeal from the interlocutory decree herein to the United States Circuit Court of Appeals for the 8th Circuit.

Dated, February 8, 1938.

MERRILL E. OTIS,
U. S. District Judge.

Filed in the United States District Court Feb. 8, 1938.

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117 Supersedeas Bond.

Know All Men By These Presents, that we, General Electric Supply Corporation, a corporation, as Principal, and Indemnity Insurance Company Of North America, as Surety, are held and firmly bound unto The Maytag Company in the full and just sum of Seventy-Five Thousand Dollars ($75,000.00) to be paid to the said The Maytag Company, its successors, legal representatives and assigns, to which payment well and truly to be made we bind ourselves, our heirs, successors, legal representatives and assigns, jointly and severally by these presents.

Sealed with our seals and dated this 14th day of February, 1938.

The condition of this obligation is such that,

Whereas, the District Court of the United States for the Western Division of the Western District of Missouri did on the 8th day of February, 1938 in a suit pending in said court between The Maytag Company, plaintiff, and General Elec-

tric Supply Corporation, defendant, file an interlocu-
118 tory decree, which decree was entered of record in said court on February 8, 1938 and wherein said court ordered:

"That a perpetual injunction issue in due form of law against said defendant, the General Electric Supply Corporation, enjoining it and those in privity with it, their officers, agents, servants, employees and attorneys and those in active concert or participating with them and each of them, from directly or indirectly manufacturing, selling, using, advertising or offering so to do, any washing machine or part thereof infringing claims 23, 26 and 29, or either of them, of the Snyder patent No. 1,866,779, dated July 12, 1932, or any device embodying or utilizing the same, and particularly General Electric washing machines, "model AW 19 and other models" (illustrated in evidence by plaintiff's exhibits 12, 12a, 12b, 16, 16A, 16B, 16C, 16D, 16E and 16F), and from in any respect infringing upon said Snyder patent or aiding or abetting or in any way contributing to the infringement thereof. That the plaintiff recover of defendant the profits, gains, savings and advantages which it has derived by reason of the aforesaid infringement and the damage which the plaintiff has sustained by reason of said infringement."

And, Whereas, on February 8, 1938 said court did file in this case an order and supersedeas providing that the injunction and accounting provided for in said interlocutory decree be and they were thereby superseded and suspended pending the hearing and determination of defendant's appeal from the interlocutory decree and until the further order of said court;

Now the condition of the above obligation is such that if the General Electric Supply Corporation shall promptly take and vigorously prosecute said appeal to effect and answer all profits, damages and costs which may be awarded the plaintiff on final termination of this cause if defendant fail to make its plea good, then the above obligation to be
119 void, otherwise to remain in full force and effect.

GENERAL ELECTRIC SUPPLY
CORPORATION, a corporation.
(Seal) By L. R. Link,

Treasurer.
Principal.

Attest:

A. H. Foerster,
Asst. Secretary.

INDEMNITY INSURANCE COMPANY OF NORTH AMERICA,
By R. C. Groves,
Attorney-in-fact.
Surety.

(Seal)

Approved this 15th day of February, 1938 to act as a supersedeas.

MERRILL E. OTIS,
Judge of United States District Court.

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120 State of Connecticut,
County of Fairfield—ss.:

On this 10th day of February, 1938 before me appeared L. R. Link to me personally known, who being by me duly sworn, did say that he is the Treasurer of General Electric Supply Corporation, a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said L. R. Link acknowledged said instrument to be the free act and deed of said corporation.

In Witness Whereof, I have hereunto set my hand and affixed my Notarial Seal this 10th day of February, 1938.

R. J. STRAIN,
(L. S.) Notary Public within and for said County and State.

My Commission Expires January 31, 1941.

Filed in the United States District Court Feb. 15, 1938.

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121 (Petition For Appeal and Allowance Thereof.)

To the United States District Court, Western District of Missouri, Western Division:

The defendant, General Electric Supply Corporation, feeling aggrieved by the interlocutory decree made and entered herein on the 8th day of February, 1938, hereby appeals to the United States Circuit Court of Appeals for the Eighth Circuit from said decree adjudging Letters Patent 1,866,779

valid and infringed, granting an injunction and ordering an accounting, for the reasons set forth in the assignment of errors filed herewith; and prays that its appeal be allowed and citation issued directed to the above named The Maytag Company, commanding that it appear before the United States Circuit Court of Appeals for the Eighth Circuit, to do and receive what may appertain to justice to be done in the premises, and that a transcript of the record, proceedings and papers upon which said decree is based, duly authenticated, be sent to the United States Circuit Court of
122 Appeals for the Eighth Circuit.

MICHAELS, BLACKMAR, NEWKIRK, EAGER & SWANSON,
Attorneys for Defendant.

Lawrence Bristol,
Of Counsel.

Roy P. Swanson,
Of Counsel.

Ordered that the foregoing appeal be, and hereby is allowed, upon giving bond as required by law for the sum of $250.00.

MERRILL E. OTIS,
United States District Judge.

Dated: Kansas City, Mo., March 7th, 1938.

Filed in the United States District Court, Mch. 7, 1938.

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123 Assignment of Errors.

Comes now the defendant, General Electric Supply Corporation, and assigns the following errors in the decree made and entered herein on February 8, 1938, upon which it will rely in the prosecution of its appeal from said decree:

1. The Court erred in holding that United States Letters Patent to Howard F. Snyder, No. 1,866,779, are good and valid as to claims 23, 26 and 29 thereof, or any of them, and in not holding said letters patent invalid and void as to said claims 23, 26 and 29 thereof and each of them.

2. The Court erred in holding that Howard F. Snyder was the first, original and sole inventor of the subject matter described in Letters Patent No. 1,866,779, and claimed in claims 23, 26 and 29 thereof, or any of them; and in not holding that before the alleged invention by said Snyder of the subject matter of said Letters Patent and more than two

years before his original application therefor, United States patents to Davis 1,240,826, Morse 106,853, Hermance
124 88,478, British patents to Jardine 18,202 and Hanna 19,027, and French patent to Henin 363,514 and each of them had patented and described every material or substantial part of the alleged invention of claims 23, 26 and 29 of the said Letters Patent in suit.

3. The Court erred in not holding that claims 23, 26 and 29 of said Letters Patent 1,866,779 are invalid as not involving invention over devices patented and described prior to Snyder's alleged invention in United States patents to Doughty and Davis 1,496,395 and the application therefor, Davis 1,240,826, Morse 106,853, Hermance 88,478, British patents to Jardine 18,202 and Hanna 19,027, and French patent to Henin 363,514.

4. The Court erred in not holding that the alleged invention described in said Letters Patent and claimed in claims 23, 26 and 29 thereof was made and reduced to practice by Herman W. Doughty, George L. Davis and The 1900 Washer Company prior to the alleged invention thereof by said Howard F. Snyder.

5. The Court erred in not holding that the subject matter described in said Letters Patent 1,866,779 and claimed in claims 23, 26 and 29 thereof, was in public use and on sale in this country by The 1900 Washer Company, William S. Miller, and others, more than two years before the filing of the application therefor.

6. The Court erred in not holding that washing machines constructed according to the disclosures contained in United States patents to Doughty and Davis 1,496,395, Morse 106,853 and British patent to Jardine 18,202 and each of them operate fundamentally in the same manner to secure the same result by the same means as machines constructed in accordance with said Letters Patent in suit and that differences, if
125 any, are in matters of degree only.

7. The Court erred in not holding that washing machines manufactured and sold by William S. Miller prior to said Snyder's alleged invention operate in the same manner to secure the same result by the same means as machines described in the said Letters Patent in suit with the impeller located at the upper portion of the tub and stated to be within the contemplation of said Snyder's invention.

8. The Court erred in not holding that machines constructed in accordance with the disclosure of United States

patent to Davis 1,240,826 operate in the same manner by the same means and with the same result as machines described in said Letters Patent in suit with the impeller located at the upper portion of the tub and stated to be within the contemplation of said Snyder's invention.

9. The Court erred in holding that claims 23, 26 and 29 of said Letters Patent are patentably distinguishable from the machines of the prior art on the basis of relative speeds of operation or relative proportions of tub and impeller.

10. The Court erred in holding that the claims of a patent should be so construed as to include novel features and advantages inherent in the invention, whether prescribed in the claims or not.

11. The Court erred in holding in effect that no instance of the prior art can be effective as an anticipation of claims 23, 26 and 29 of the Letters Patent in suit unless it discloses in and of itself every detail shown in said Letters Patent, whether of an inventive or an obvious nature.

126 12. The Court erred in not holding that the machine of said Letters Patent in suit in actual operation depends, for the removal of dirt from the fibers of the fabrics being washed, upon rubbing, pounding, dragging and squeezing, as do the machines disclosed in the prior art patents to Hermance 88,478, Morse 106,853, Davis 1,240,826, Doughty and Davis 1,496,305, (British) Jardine 18,206, (French) Henin 363,514, and the machines made by The 1900 Washer Company and by William S. Miller.

13. The Court erred in holding that the machines known to the art prior to the alleged invention of the subject matter of the said Letters Patent in suit "did not work" and "did not work from a practical viewpoint and certainly not in the ways disclosed in claims by Snyder".

14. The Court erred in holding that the testimony of defendant's expert did not accurately describe the earlier machines and their operation as they were demonstrated at the trial.

15. The Court erred in holding that said Howard F. Snyder reduced to practice in May, 1920 the alleged invention described in said Letters Patent and claimed in claims 23, 26 and 29 thereof, and in not holding that there was no sufficient evidence to establish any earlier date for Snyder's alleged invention than October 1921.

16. The Court erred in holding that the defendant, General Electric Supply Corporation, has infringed upon claims 23, 26 and 29 of said Letters Patent or any of them, and in granting the injunction as stated in said decree, directed to defendant, General Electric Supply Corporation.

127 17. The Court erred in not holding that claims 23, 26 and 29 of said Letters Patent and each of them, by reason of limitations included therein by the plaintiff to secure their allowance by the Patent Office over relevant prior art, are not infringed by the defendant's machines.

18. The Court erred in decreeing that defendant had infringed said Letters Patent by the use and sale of washing machines illustrated in evidence by plaintiff's exhibits 12-B, 16-A and 16-B and in decreeing that an injunction issue restraining the defendant from selling any such machines, shown by uncontradicted testimony to have been manufactured by Easy Washing Machine Corporation.

19. The Court erred in refusing to include in the decree appealed from the following provision, or any provision of similar import:

But nothing in the injunction shall prevent or is intended to prevent or enjoin this defendant from handling, using and selling washing machines covered by said Snyder Patent No. 1,866,779, manufactured by the Easy Washing Machine Corporation, and by the Hurley Machine Company, having a right to manufacture, use and sell such washing machines under judicial decrees in the federal courts of the Second Circuit, wherein in such litigations it has been judicially determined that the said Snyder patent is invalid and void as to said claims 23, 26 and 29 thereof.

20. The Court erred in holding that plaintiff's disclaimer of claims 1 and 38 of said Letters Patent was no admission that said claims were anticipated or were invalid; and in not holding that plaintiff thereby admitted that said claims covered more than that of which Snyder was the original or first inventor or discoverer.

128 21. The Court erred in not holding that plaintiff had received good and sufficient notice that claim 39 of said Letters Patent claimed more than that of which said Howard F. Snyder was the original or first inventor or discoverer; and in not holding that said Letters Patent are invalid and void for plaintiff's failure to disclaim claim 39 thereof within a reasonable time after plaintiff had received notice that said claim covered more than that of which said Howard F. Snyder was the original or first inventor or dis-

coverer, to-wit, at the same time that plaintiff disclaimed claims 1 and 38 thereof.

22. The Court erred in not holding that disclaimer by plaintiff of claims 1 and 38 made the practice of the invention claimed in those claims free and open to use by the public.

23. The Court erred in not holding that the plaintiff had received good and sufficient notice that claim 20 of said Letters Patent claimed more than that of which said Howard F. Snyder was the original or first inventor; and in not holding that said Letters Patent are invalid and void for plaintiff's failure to disclaim claim 20 thereof within a reasonable time after plaintiff had received notice that said claim covered more than that of which said Howard F. Snyder was the original or first inventor, to-wit, at the same time that plaintiff disclaimed claims 1 and 38 thereof.

24. The Court erred in not holding that said Letters Patent are invalid and void in their entirety for plaintiff's failure to disclaim claims 23 and 26 thereof within a reasonable time after the decision in the case of The Maytag Company v. The Brooklyn Edison Company, 86 F. (2d) 625, by the Circuit Court of Appeals of the Second Circuit, rendered November 30, 1936, and for plaintiff's fail-
129 ure to disclaim said claims within a reasonable time after final decrees rendered June 9, 1937, in the cases of The Maytag Company v. Easy Washing Machine Corporation, Equity No. 75-202, and The Maytag Company v. Hurley Machine Company, and Electric Household Utilities Corporation, Equity No. 81-257, in the United States District Court for the Southern District of New York.

25. The Court erred in not holding that said Letters Patent No. 1,866,779 are invalid and void as to claims 23, 26 and 29 thereof for the reason that the invention as claimed in said claims was in public use in this country more than two years before insertion in the application for said Letters Patent, of the said claims, or any claims directed to the subject matter thereof.

26. The Court erred in holding that the machine of the alleged Snyder invention has had an unusual commercial record, and in not holding that such commercial success as attended the machines made by plaintiff allegedly under said Letters Patent was due to factors other than the alleged novelty of the machine described in said Letters Patent and claimed in claims 23, 26 and 29 thereof.

27. The Court erred in not holding that the commercial success alleged by plaintiff related to machines which departed in many material and substantial respects from the machine described and shown in said Letters Patent and claimed in claims 23, 26 and 29 thereof, and which embodied inventions described and claimed in other Leters Patent.

130 28. The Court erred in attributing to claims 23, 26 and 29 any consideration by the Patent Office officials and the Court of Customs & Patent Appeals of other and different claims not relied on in this suit; and in not holding that all consideration given to claims 23, 26 and 29 of said Letters Patent by the Patent Office Examiner was based on the assumption by the Patent Office officials of the correctness of plaintiff's oft repeated assertion, now shown to be incorrect, that the machine described in the application for said Letters Patent washes by water action alone; and in not holding that the presumption of validity from the issuance of the patent is destroyed by the now admitted fact that the machine described in said Letters Patent does not wash by water action alone.

29. The Court erred in admitting in evidence Plaintiff's Exhibits 16, 16A, 16B, 16C, 16D, 16E and 16F; the proceedings in the trial court respecting the admission of this evidence being as follows:

"Mr. Lane: I will offer the page advertisement taken from the Better Homes & Gardens publication, page 47 of October, 1934; the advertisement of the new G.E. Double Tub Washer which has already been marked in this case as Deposition Exhibit Plaintiff's Cross 6-3; the direction card which has been identified by the witness, the announcement of February, 1935, as Plaintiff's Exhibit 16, 16A, 16B, 16C and 16D.

Mr. Bristol: I object to these as incompetent and not shown to have any binding effect on the defendant before this Court.

Mr. Lane: I am not putting them in for that.

The Court: Overruled.

131 Mr. Bristol: I would like to add to that objection one or two matters which appear on the documents themselves. This advertisement from Better Homes & Gardens obviously shows a tub, the outward appearance of which has no resemblance to the Exhibit 12, Defendant's machine in this case. The paper describing the G.E. Double

Tub Washer is obviously an entirely different model from anything which is here in evidence or which has, so far as I am aware, been charged to have infringed.

Mr. Lane: It is not different in operation and construction, as far as operation is concerned.

Mr. Bristol: I am addressing myself to the paper and the statement shown on the paper. The same remarks apply to the direction card. That, also, is the double tub washer having an extractor tub at one side and not having any wringer such as Exhibit 12 has and I do not think that these exhibits, which on their face do not appear to correspond with the machine on which the plaintiff bases its charge of infringement, should be received.

Mr. Lane: We base our charge of infringement not only on the original machine but that as a sample of all these others, that is just representative of what all these others show.

Mr. Bristol: The February, 1935 advertisement, that does not purport to be a statement of fact and purports to be an expectation. 'Beginning February the General Electric' and so forth 'will be designed'. It does not appear to be a present statement.

Mr. Lane: Is this an objection?

Mr. Bristol: Part of the objection, yes; and it does not show the double tub washers such as are shown on two of the other documents that are offered.

The Court: The objections as amplified are overruled and exception allowed."

* * * *

Mr. Lane: I am also going to offer under that stipulation circular which is marked 'Turn demonstrations into dollars', the original copy of it and also circular marked 'Activator' as Plaintiff's Exhibit 16E and 16F.

132 Mr. Bristol: These are objected to as not binding in any way on the defendant.

The Court: Overruled, exception allowed."

(Tr. pp. 198-202)

30. The Court erred in excluding from evidence plaintiff's Exhibit 40 for Identification, an aluminum agitator for a washing machine, offered for the purpose of showing substantially contemporaneous and independent development of the subject matter defined in claims 23, 26 and

29 of the said Letters Patent in suit. The proceedings in the trial court respecting the exclusion of this evidence were as follows:

"Mr. Bristol: * * I also offer in evidence as Defendant's Exhibit 40 an aluminum agitator which has been previously marked Defendant's Deposition Exhibit C which is identified in the deposition of John N. Lint, called in Meyersdale, Pennsylvania.

Mr. Lane: Object to that for the reason that it was not proved to have been made prior to the Snyder application, incompetent, irrelevant and immaterial, no bearing upon the issues.

* * * *

The Court: Ruling will be reserved upon that objection and the exhibit will be received subject to the objection.

Mr. Bristol: I think we can dispose of it without further adieu upon this statement. The witness was in the business of making washing machines; he testified that he had been engaged in designing a washing machine and he did design a washing machine which had an aluminum tub and this agitator which has been marked Defendant's Exhibit 40, and all of this was before he had any knowledge of the existence of any Maytag machine made in accordance with the Snyder patent, the Maytag gyrator machine. He had just about got this machine of his finished, ready to go on the market, when one of his associates, the witness William S. Miller, suddenly saw a Maytag machine being brought into town and he came to him and said 'Somebody has got the same sort of thing that you have been working on.' Now, I concede that the date of the making of this agitator, Exhibit 40, was later than the filing of the Snyder application; I concede that readily. It is offered to show that entirely independent of Snyder, Lint developed this thing which we have identified here and before the Court, quite independently of any knowledge of Snyder and at about the same time. It is not offered as an anticipation of the patent in suit.

133

Mr. Lane: I cannot see how it is material at all to show that somebody else did not know.

The Court: I do not think it is material. The objection is sustained.

(Tr. pp. 494-5, 496-7)

31. The Court erred in not making a decree dismissing the bill of complaint and the amended and substituted bill of complaint, with costs to the defendant.

Wherefore, and for divers other errors appearing in the Record of said cause, defendant prays that the said decree be reversed, and that a decree be entered in favor of defendant, dismissing the bill of complaint and the amended and substituted bill of complaint, and providing that defendant recover its costs in this Court and in the United States Circuit Court of Appeals for the Eighth Circuit, and for such other and further relief as may seem just.

Dated:

GENERAL ELECTRIC SUPPLY CORPORATION
By Michaels, Blackmar, Newkirk, Eager & Swanson
Its Attorneys

Lawrence Bristol
Of Counsel

Roy P. Swanson
Of Counsel

Filed in the United States District Court Mch. 7, 1938.

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134 Appeal Bond.

Know All Men By These Presents, that we, General Electric Supply Corporation, a corporation, as Principal, and Indemnity Insurance Company of North America, as Surety, are held and firmly bound unto The Maytag Company in the sum of Two Hundred and Fifty Dollars ($250.00) to be paid to the said The Maytag Company, its successors, legal representatives and assigns, to which payment well and truly to be made we bind ourselves, our heirs, successors, legal representatives and assigns, jointly and severally by these presents.

Sealed with our seals and dated this 28th day of February, 1938.

The Condition of this bond is such that, Whereas, the above-named General Electric Supply Corporation is about to take an appeal to the United States Circuit Court of Appeals for the Eighth Circuit, to reverse the interlocu-
135 tory decree dated the 8th day of February, 1938, rendered in the above entitled suit, in the District Court of the United States for the Western Division of the Western District of Missouri, granting an injunction and an accounting;

Now, Therefore, if the above-named General Electric Supply Corporation shall prosecute its appeal to effect, and an-

swer all costs if it fail to sustain its appeal, then this obligation shall be void, otherwise the same shall be and remain in full force and effect.

GENERAL ELECTRIC SUPPLY CORPORATION,
By LeRoy Link, (Seal)
Treasurer.
Principal,

Attest:

A. H. Foerster,
Asst. Secretary.

INDEMNITY INSURANCE COMPANY OF NORTH AMERICA,
(Seal) By R. C. Groves, Attorney-in-Fact,
Surety.

Approved this 7th day of March, 1938.

MERRILL E. OTIS,
United States District Judge.

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136 State of Connecticut,
County of Fairfield.—ss.:

On this 21st day of February, 1938 before me appeared LeRoy Link to be personally known, who being by me duly sworn, did say that he is the Treasurer of General Electric Supply Corporation, a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said LeRoy Link acknowledged said instrument to be the free act and deed of said corporation.

In Witness Whereof, I have hereunto set my hand and affixed my Notarial Seal this 21st day of February, 1938.

(Notarial Seal) B. J. STRAIN,
Notary Public.

My commission expires, January 31, 1941.

Filed in the United States District Court, Mch. 7, 1938.

137 (Order, April 9, 1938, Extending Time to File Narrative Statement of Evidence and Transcript.)

Pursuant to defendant's application, by its attorneys, for enlargement of time to file its praecipe, narrative statement of evidence and transcript of record and docket the same in the United States Circuit Court of Appeals for the Eighth Circuit, and the Court being fully advised in the premises, it is

Ordered that the time for filing the praecipe, narrative statement of evidence and for filing the transcript of record on appeal and docketing this cause in the United States Circuit Court of Appeals for the Eighth Circuit be and the same is hereby extended to and including June 1, 1938.

Dated: Kansas City, Mo., April 9, 1938.

MERRILL E. OTIS,
United States District Judge.

Filed in the United States District Court, Apr. 9, 1938.

(Election As To Printing of Record.)

Now comes the defendant and, in connection with appeal taken by the defendant in the above-entitled cause, elects to take and file in the United States Circuit Court of Appeals for the Eighth Circuit, the transcript of record in the above-entitled cause, to be printed under the supervision of the Clerk of said Circuit Court of Appeals, under its rules.

MICHAELS, BLACKMAR, NEWKIRK,
EAGER & SWANSON,
ROY P. SWANSON,
Attorneys for Defendant.

Received copy this 18th day of May, 1938.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attorneys for Plaintiff-Appellee.

Filed in the United States District Court, May 18, 1938.

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138 Notice of Filing Praecipe For Transcript and Condensed Statement of Evidence.

Sir:

Please Take Notice that on the 18th day of May, 1938, defendant filed with the Clerk of the above-entitled Court, defendant's praecipe for transcript on appeal in the above-entitled cause, copy of which is hereto attached.

Please Take Further Notice that if you desire additional portions of the record incorporated into the transcript, you shall file with the Clerk of the Court your praecipe within ten days hereafter, indicating such additional portions of the record by you desired.

Please Take Further Notice that on the 18th day of May, 1938, defendant lodged with the Clerk of the above-entitled Court a condensed statement of evidence in the above-entitled cause, for your examination, and that on the 28th day of May, 1938, defendant will present said condensed statement of evidence to the Honorable Merrill E. Otis, one
139 of the judges of the above Court, at his chambers in Kansas City, Missouri, and ask for the approval of said condensed statement of testimony.

ROY P. SWANSON,
MICHAELS, BLACKMAR, NEWKIRK,
EAGER & SWANSON,
Attorneys for Defendant.

To: Nelson E. Johnson, Esq., Attorney for Plaintiff, Federal Reserve Bank Building, Kansas City, Missouri.

Service of the above notice acknowledged this 18th day of May, 1938.

PARKINSON & LEE,
NELSON E. JOHNSON,
Solicitor for Plaintiff.

Filed in the United States District Court, May 18, 1938.

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140 (Order, May 28, 1938, Further Extending Time To File Narrative Statement of Evidence and Transcript.)

Pursuant to defendant's application, by its attorneys, for enlargement of time to file its praecipe, narrative statement of facts and transcript of record and docket the same in the United States Circuit Court of Appeals for the Eighth Circuit, and the Court being fully advised in the premises, it is

Ordered that the time for filing the praecipe, narrative statement of evidence and for filing the transcript of record on appeal and docketing this cause in the United States Circuit Court of Appeals for the Eighth Circuit be and the same hereby extended to and including June 30, 1938.

Dated: Kansas City, Missouri, May 28, 1938.

MERRILL E. OTIS,
United States District Judge.

Filed in the United States District Court, May 28, 1938.

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141 (Praecipe For Transcript by Defendant.)

To the Clerk:

In lieu of the praecipe for transcript filed herein on or about May 18, 1938 and in substitution therefor you will please use the following.

Please prepare a transcript of record to be used on appeal in the above-entitled cause, including therein the following pleadings, papers, orders and exhibits, viz.:

1. Bill of Complaint.

2. Amended and Substituted Bill of Complaint.

3. Copy of Disclaimer attached to Amended and Substituted Bill of Complaint.

4. Answer of Defendant General Electric Supply Corporation.

5. Memorandum and Order on General Electric Company's Motion to Quash.

6. Order Quashing Service and Dismissing Bill as to General Eelctric Company.

7. Order Granting Leave to Amend Answer.

8. Amendment to Answer.

9. Condensed statement of evidence, including the narrative statement of the evidence as set forth in pages 1 to 865 as lodged herein and the following Exhibits:

142 Plaintiff's Exhibits—

1; 5-C; 6-A to O inclusive; 7-C; 7-D; 9-A; 10-A; 11-A; 11-B; 11-C; 11-D; 11-E; 11-F; 12-A; 12-B; 13; 14; 15; 16; 16-A; 16-B; 16-C; 16-D; 16-E; 16-F; 17; 23; 24; 25; 25-A;

25-B; 25-C; 25-D; 25-E; 26; 27-1; 27-2; 28; 29; 30; 31-A to F inclusive; 32; 33; 34; 35; 36; 37; 38; 39; 40; 41; 42; 43; 44.

Defendant's Exhibits—

1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 25; 26; 31; 32; 33; 34; 35; 37; 38; 39; 42; 43; 44; 45; 46; 46-A; 47-A; 47-B; 48; 49.

10. The following Exhibits, forming part of the evidence taken in this case, shall be considered as Physical Exhibits and transmitted to the Circuit Court of Appeals as part of the evidence in this case:

Plaintiff's Exhibits—

3; 4; 5; 5-A; 7-; 7-A; 7- ; 8-A; 9; 10; 11; 12; 45; 46; 47; 48.

Defendant's Exhibits—

14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 27; 28; 29; 30; 36.

11. Memorandum Opinion, Findings of Fact, Conclusions of Law, Indicated Decree, with Amendment interlined.

12. Findings of Fact and Conclusions of Law.

13. Defendant's Proposed Findings of Fact and Conclusions of Law.

14. Letter dated February 1, 1938 modifying Opinion.

15. Transcript of Proceedings on settlement of Decree.

16. Interlocutory Decree.

143 17. Order and Supersedeas Bond.

19. Petition for Appeal.

20. Order Allowing Appeal.

21. Assignment of Errors.

22. Bond for costs on appeal.

23. Citation on Appeal.

24. Order extending time to lodge Narrative Statement and for filing Praecipe and Transcript of Record on Appeal to and including June 1, 1938.

25. Election as to Printing.

26. Notice of Filing Praecipe and lodging Statement of Evidence.

27. Order approving condensed Statement of the evidence.

28. This Praecipe.

29. Certificate of Clerk.

MICHAELS, BLACKMAR, NEWKIRK,
EAGER & SWANSON,
ROY P. SWANSON,
Attorneys for Defendant.

Notice of filing the foregoing praecipe is hereby waived, and the same is hereby agreed to and approved, except as to the inclusion of Defendant's Exhibit 36 in Item 10 thereof, and the inclusion of Item 14 therein. This is without prejudice to a motion by plaintiff to strike said defendant's Exhibit 36 and said Item 14 therefrom, and without prejudice to Plaintiff's counter-praecipe for the inclusion of additional items in the transcript to be certified to the Circuit Court of Appeals, and the right of plaintiff to object to such parts of defendant's narrative statement as it may desire and to call for the inclusion therein of such items as it may desire.

Dated May 27, 1938.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attorneys for Plaintiff-Appellee.

Filed in the United States District Court, May 28, 1938.

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144 (Praecipe For Transcript by Plaintiff.)

To the Clerk of the United States District Court Western District of Missouri, Western Division:

You are hereby requested, pursuant to the provisions of Rule 24 of the United States Circuit Court of Appeals, to incorporate in the transcript of the record on the appeal herein the following:

1. Motion to Quash Service and Dismiss Bill for Lack of Jurisdiction as to General Electric Company, including affidavits of David Hays and George Fiske.

2. Stipulation filed March 20, 1937.

3. Defendant's Petition for Continuance of Trial Date (excluding affidavits) filed November 3, 1937.

4. Defendant's Motion for Bill of Particulars filed November 3, 1937.

5. Order Denying Petition for Continuance of Trial Date and Motion for Bill of Particulars entered November 6, 1937.

6. Plaintiff's Exhibits 18-1, 18-2, 18-3, 18-4, 18-5, 18-6, 19-1, 19-2, 19-3, 20, 21 and 22.

7. Motion for Supersedeas pending Appeal, including affidavits of LeRoy Link and Ralph J. Brown, including statement attached.

8. This Counter-Praecipe.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attorneys for Plaintiff-Appellee.

Received copy of the foregoing Counter-Praecipe this 27th day of May, 1938, and exceptions as to time of filing same waived.

ROY P. SWANSON,

MICHAELS, BLACKMAR, NEWKIRK,
EAGER & SWANSON,
Attorneys for Defendant-Appellant.

Filed in the United States District Court, May 28, 1938.

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145 (Supplemental Praecipe For Transcript by Defendant.)

To the Clerk:

Please include in the transcript of record to be used on appeal in the above entitled cause, in addition to the pleadings, papers, orders and exhibits called for in the Praecipe for Transcript filed May 28, 1938, the following order entered herein after the said Praecipe for Transcript was filed, viz.:

26-a. Order entered May 28, 1938, extending time to file Praecipe, Narrative Statement and Transcript of Record on Appeal to and including June 30, 1938.

26-b. Order as to Praecipes for transcript of record on appeal.

28-a. This Supplemental Praecipe.

ROY P. SWANSON,

MICHAELS, BLACKMAR, NEWKIRK,
EAGER & SWANSON,
Attorneys for Defendant-Appellant.

Notice of filing the foregoing supplemental praecipe is hereby waived. Copy of the above supplemental praecipe received this 31st day of May, 1938.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attorneys for Plaintiff-Appellee.

Filed in the United States District Court, May 31, 1938.

Order As To Praecipes For Transcript of Record on Appeal.

This cause came on to be heard on the praecipe filed by defendant-appellant on or about May 28, 1938, and the counter-praecipe filed by plaintiff-appellee on or about May 28, 1938, and was argued by counsel and considered by the
146 Court; and the Court being fully advised in the premises it is hereby

Ordered that the praecipe filed by defendant-appellant is hereby approved as filed; and it is further

Ordered that the counter-praecipe filed by plaintiff-appellee is approved as to items 6, 7 and 8 thereof and is disapproved as to items 1, 2, 3, 4 and 5 thereof; and it is further

Ordered that the transcript of record on appeal be prepared in accordance with said praecipes as hereinabove approved.

Exceptions allowed to plaintiff-appelle to so much of this order as disapproves items 1, 2, 3, 4 and 5 of the counter-praecipe.

MERRILL E. OTIS,
Judge.

Copy received this 31st day of May, 1938.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attys. for Plaintiff.

Filed in the United States District Court, May 31, 1938.

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147 Narrative Statement of Evidence.

United States District Court, Western District of Missouri, Western Division.

The Maytag Company, a corporation, Plaintiff,
In Equity vs. No. 2892
General Electric Supply Corporation, a corporation, Defendant.

Before:

Hon. Merrill E. Otis,
U. S. D. J.

Kansas City, Mo., Nov. 29, 1937.

Appearances:

Nelson E. Johnson, Esq., Solicitor for Plaintiff; Messrs. Parkinson & Lane, Wallace R. Lane, Esq., Clarence Loftus, Esq., and Carl Geppert, Esq., of Counsel.

Messrs. Michaels, Blackmar, Newkirk, Eager & Swanson, Solicitors for Defendant; Messrs. Watson, Bristol, Johnson & Leavenworth, Lawrence Bristol, Esq., Roy P. Swanson, Esq., Elmer R. Helferich, Esq., and John T. Kelton, Esq., of Counsel.

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148 Thereupon the Plaintiff, to sustain the issues on its part, offered and introduced the following evidence, oral and documentary, to-wit, as follows:

Mr. Johnson: We desire to offer as an admission against interest, part of paragraph 6 of the Answer of the defendant. I will read it. It is very brief: "6. Defendant admits that it has sold and intends to continue to sell within the Western Division of the Western District of Missouri and elsewhere General Electric Washing machines, including model AW-19 and other models."

In that connection we desire to call the attention of the Court to the filing mark on the Answer, March 25, 1937.

We also desire to read as an admission against interest from the stipulation filed in connection with the motion to quash service "Paragraphs 2 and 3: Counsel for General Electric Company admit that that company owned all of the outstanding capital stock of the defendant, General Electric Supply Corporation, at the times set forth in plaintiff's original and amended bill of complaint.

Counsel for the plaintiff, the Maytag Company, admit the regular course of dealing between General Electric Company

and General Electric Supply Corporation with respect to the washing machines complained of in the original and amended bills of complaint herein, is as set forth in the affidavit
149 of David Hays verified February 24, 1937, and of George Fiske verified February 25, 1937, attached to said motion to quash and dismiss."

Mr. Bristol: If your Honor please, I object to this as having no relevancy to any issue now in the case.

The Court: What do you say to that, Judge Johnson?

Mr. Johnson: It merely shows the course of operating as to the shipments of these machines and the sale of machines in the state, within this district. In the affidavit which is made a part of this Mr. Hays set that out. It goes to the sale of these machines in this district, the distribution of them by the General Electric Supply Company.

The Court: And you offer it for that purpose only?

Mr. Johnson: Yes.

The Court: It is received only for that purpose. Exception allowed to the defendant.

Mr. Johnson: I read now from the affidavit of David Hays filed in this cause as a part of the stipulation "The Kansas City office of General Electric Supply Corporation, a Delaware corporation, transmits to General Electric Company at Bridgeport orders for such washing machines as it desires to purchase and such orders are accepted by General Electric Company at Bridgeport. Shipments of washing machines pursuant to orders so accepted are made by General Electric Company, at Bridgeport, f. o. b. Bridgeport (except certain shipments made f. o. b. the point of manufacture in New York State); and bills therefor are rendered by Gen-
150 eral Electric Company at Bridgeport to General Electric Supply Corporation, Kansas City, Mo. Payments are made by General Electric Supply Corporation, Kansas City, Mo., to General Electric Company at Bridgeport."

Mr. Bristol: I object to that as irrelevant to any issue in this case. The issue here in the sale by General Electric Supply Corporation of specified washing machines, model AW-19 and that is all the issue concerns. The rest of it, that these machines come from Bridgeport is perfectly true but that is quite immaterial to this case.

The Court: It may be immaterial. The objection however will be overruled and the testimony will be received only for

the purpose of showing the defendant does distribute machines of this character. Exception allowed.

Mr. Johnson: We now desire to offer in evidence as Plaintiff's Exhibit 1, Letters Patent 1,866,779, July 12, 1932 to Howard F. Snyder.

(Snyder patent 1,866,779 marked Plaintiff's Exhibit 1 and received in evidence.)

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151 WALTER BONES, of lawful age, being produced, sworn and examined as a witness on behalf of the plaintiff, testified as follows:

Direct Examination.

By Mr. Lane:

My name is Walter Bones, I live in Minneapolis, Minnesota, and I am branch manager for the Maytag Company. I am fifty-two years old and I have been connected with the Maytag Company and its predecessor in name since 1906.

The place of business of the Maytag Company since I have been connected with it has been at Newton, Iowa. The name of the Maytag Company prior to the use of the name "Maytag Company" by that company was the Parsons Band Cutter and Self Feeder Company; I think the feeders were discontinued in 1922.

The plaintiff first engaged in the washing machine business in 1908; it first started with the peg dolly type of machine. One of those machines is here in the room; it is the first machine with the wood tub.

Mr. Lane: May I mark that as Plaintiff's Exhibit 4, your Honor?

The Court: Yes.

(Peg dolly machine marked Plaintiff's Exhibit 4 for identification).

Mr. Bristol: I object simply for the purpose of confining the thing to what I believe to be relevant to this case and make the objection that this machine is quite irrelevant.

The Court: Overruled, exception allowed.

The Witness: The Maytag Company has also been engaged in the manufacture and sale of the cylinder type
152 machine, which it manufactured for, I would say, about two or three years. The Maytag Company also made the flange dolly type and the gyratator type. They commenced the manufacture and sale of the gyrator type in

1922. Since the introduction of the gyratator type we have not sold anything else; we discontinued all other types.

Q. What were the various types of washing machines that were on the market previous to 1921, with which you were familiar and came in competition?

Mr. Bristol: Same objection as to the relevancy to the issues in the case.

The Court: Overruled, exception allowed.

The Witness: The rocker scrub board type and the disc scrub board or rub board type, the peg dolly, the cylinder, oscillator and vacuum.

(Cuts of machines marked Plaintiff's Exhibit 6 for identification).

Q. With those cuts before you just state what they show and if you will, put A, B, and C on the corner of the sheet as you come to them to save time?

A. A is the rocker rub board type; B is the disc rub board type.

Q. Will you in doing that describe just briefly how each one works?

Mr. Bristol: If your Honor please, I do not want to be interrupting all the time simply to make an objection.
153 May my objection to this line of testimony as irrelevant to any issue here run to the whole group?

The Court: Certainly, it will be overruled, and exception allowed.

The Witness: A, the rocker rub board type. The load of clothes is placed in the machine and the rocking rub board worked on top of the clothes, scrubbing and rubbing them in a mass. In that machine they were compressed between the bottom of the tub and the scrubbing ribs on the rocker rub board.

B is a disc rub board, washing principle, where the rub board slides up and down and works on top of the clothes, compresses the mass of clothes, rubbing them against the disc, the side walls of the tub and the bottom of the tub; very slow in washing principle. The lid when open has a hand wash board or rub board on the inside of the lid which can be used for washing those garments that were not properly cleansed with the machine. It was customary in my competi-

tive experience to find machines that were thus equipped to supplement the washing action of the rub board type machines. Model C is another disc rub board type; it works the same as Model B, and Model D is another disc rub board type working the same as Models B and C.

Model E is the peg dolly type. The dolly slides up and down on its driving member, permitting it to lower into the garment, into the mass of clothes with the peg. When the power is applied it will pull the clothes back and forth rubbing them against the bottom and the side walls of the
154 tub. That particular type of machine, so far as sales were concerned throughout the country with other types, was the leading washing principle at that time. It washed cleaner than any other washing principle. The objection to that type of machine during the time that I was selling it was that it was very severe on clothes. It would tear the clothes and did not wash clean. Many housewives refused to have machines for the reason that they would not wash all garments clean. It was not possible to wash delicate fabrics in the dolly type machine without injury to them because the pegs would grab the garments and pull them back and forth and would gouge holes into the fragile garment.

Model F and Model G and Model H, Model I are all of the peg dolly type. Taking the first of these, the dolly is operated back and forth and it works up and down on the clothes. The dolly is hand driven; the hand is thrown over back and forth. The next one, marked F in this exhibit, is operated by the wheel that you turn the same as a crank. F is a wheel with a crank handle and is turned in one direction which drives the dolly on a reverse oscillating motion. G has a hand lever and rack bar that brings the dolly on an oscillating motion.

H is driven with water pressure, a plunger that is forced with water pressure driving a rack bar pulling the dolly in an oscillating back and forth motion. I is driven with electric motor; that is an electric dolly driven in an oscillating
155 motion. In all of those machines the dollies were mounted loose on the driving member so they could work up and down with adjustment according to the load of clothes in the tub.

Next is the oscillator washing principle where the water, soap and clothes are placed inside the tub and it was rocked back and forth, scrubbing the clothes on the scrubbing members made a part of the interior of the tub. K is the same machine, the complete machine.

L is the cylinder type machine. There were two cylinder types, one cylinder type where the cylinder would run a few revolutions in one direction and then reverse and go back the same number in the opposite direction lifting the clothes with the rubbing member on the interior of the cylinder and dropping the clothes into the water, washing the clothes in a mass, rolling them. The reason for reversing was to untangle the clothes. The other cylinder type ran in one direction. It did not reverse; that is continuous rotation. As a result of operating the last type referred to, so far as the washing of clothes was concerned, I found that it did not wash them clean, and it tangled the clothes.

The next is a vacuum cup type machine under letter N. In that machine the load of clothes placed in the tub, the vacuum cups placed on top of the clothes, they were power driven, working on top of the clothes, compressing the mass of clothes against the vacuum cups and the bottom of the tub. That machine was not satisfactory when it came
156 to washing because the clothes were pressed together in a mass and there was nothing to open the garments up and flush the dirt out of the meshes of the garment.

O is the hand wash board. It has the lady leaning over the tub washing the clothes over the wash board.

Q. Generally speaking how did the various machines with which you are familiar, of the commercial type, compare so far as washing operations is concerned with what the housewife did as shown in that picture?

A. How did they compare?

Q. Yes, as far as the action of washing was concerned?

A. They were all about the same; it was a case of scrubbing and pulling the garments back and forth to wash them, scrubbing, beating and pounding.

Mr. Lane: I offer in evidence that set of illustrations that have been testified to by the witness, as Plaintiff's Exhibit 6-A to 6-O inclusive.

Mr. Bristol: I object to this sheet of pictures as irrelevant.

The Court: Overruled, exception allowed.

(Exhibits 6-A to 6-O received in evidence).

The Witness: In these various rub board and dolly type of machines the interior of the tub was corrugated on the

sides, for rubbing, the same as the hand rubbing board.

157 The power driven peg dolly types operated at from twenty-five to thirty-five oscillations per minute. They seemed to work best at that speed. If you would run them faster they would be too severe on the garments.

I know generally from my observation of the operation of the rub board type of machines that I have testified to as to their objections in use to those machines. They would not wash clean. They loaded the machines heavily and the rubbing or scrubbing disk worked on top of the load of clothes pressing them to the bottom of the tub and the side walls. There weren't the water currents set up to properly flush the dirt out of the garments as it should. As to the way in which they actually washed, within my observation, so far as getting the interior of the mass of the clothes clean, it was necessary to stop the machine when it was heavily loaded and take the garments out and turn them in order that they could all contact the rubbing side walls and the bottom of the disk in order to do a fairly good job of washing, where the peg dolly type, its method of pulling the clothes back and forth through the water would open up the load and do a better job. To get at the interior mass of the clothes on the dolly type, there were some garments on which it was necessary to open the machines up and turn the garments.

I have known Mr. Howard F. Snyder from 1906 until his death, which was in 1927.

158 I know of the experimental work that was done by Mr. Snyder in connection with the dolly and cylinder types of machines, from 1906 on. His first machine was a dolly type in 1908. His next machine was a belt power dolly type of machine with a stationary wringer. I think that was in 1910 or 1911. The next was an electric dolly type with stationary wringer. I believe that was the following year. Then he came out with a swinging wringer on all model machines. At that time they were making just the dolly type, hand power, belt power, and electric. In 1914, he came out with a gasoline engine driven machine, the engine placed under the tub and made a part of the machine, making it compact, a one-unit machine, engine, washer, and wringer. That was the dolly type. The next was—I can't give you the year on that, but he made an aluminum tub type machine with a cast aluminum tub with a flanged peg dolly. The tub had corrugations cast on the inside of the tub wall—

The Court: The trial of this case will continue at half past one.

* * * * * * * *

Mr. Johnson: If the Court please, may I interrupt to offer this stipulation that I started to offer earlier?

Mr. Bristol: I might say, however, that this stipulation has attached to it some of the advertising matter that Mr. Lane referred to in his opening statement. The stipu-
159 lation says that that matter was published by the General Electric Company and distributed for use in promoting the sale of its washing machines and that these are correct photostatic copies. It carefully refrains from saying anything which would bind the defendant, General Electric Supply Corporation. Therefore, while I have no objection to the stipulation being offered in evidence I want to reserve that point as to any binding effect on General Electric Supply Corporation.

The Court: Of course, the stipulation and any other evidence will be considered only as binding upon the defendant now on trial.

Mr. Johnson: We now offer in evidence the stipulation, Plaintiff's Exhibit 2.

* * * * * * * *

(Plaintiff's Exhibit 2, being a Stipulation as to states in which companies are incorporated, etc., is omitted from this printed record pursuant to stipulation of counsel at marginal page a of this printed record)

161 Attached hereto is the notice of infringement which I take it your Honor does not desire to hear read.

(Notice of Infringement.)

"Parkinson & Lane
Bankers Building

Chicago, February 1, 1937

General Electric Supply Corporation,
1411 Walnut Street.
Kansas City, Missouri.

Gentlemen:

Our client, The Maytag Company, has informed us that you are engaged in the sale of washing machines manufactured by the General Electric Company, at its factory in Bridgeport, Connecticut, and by it distributed through you in Kansas City, Missouri, and elsewhere, such machines being of the gyrator or activator type and generally indicated as Models AW-19, 22P and 23P, and others.

162 Our client believes your sale of these machines to be an infringement of its patent to Howard F. Snyder No. 1,866,779, issued July 12, 1932, and has requested us to notify you in its name of this infringement and request you to promptly desist from further infringement. You are requested to pay over all profits, gains and advantages which you have derived from such infringing sales, as well as the damages which our client has suffered by reason thereof and in default thereof we are instructed to take steps to fully protect our client's rights in the premises.

The General Electric Company, the manufacturer of the machines above referred to, has heretofore been notified with respect to our client's patent and its infringement thereof.

Very truly yours,

PARKINSON & LANE.

2/b
Register"

Also attached hereto are the described matters of advertising which have already been tendered your Honor and which will be referred to in argument and I will not take the time to read them now.

Mr. Bristol: I would just like to make the statement that I do not understand that these advertising pieces are in evidence as such, themselves, at this time; no proof has been offered to connect them in any way with the defendant now on trial.

163 The Witness: I identify this as one of the types of wash board you referred to.

Mr. Bristol: May my objection as to the relevancy of this line of examination continue?

The Court: It will be understood as continuing.

(Wash board received in evidence as Plaintiff's Exhibit 3).

(Peg dolly machine received in evidence as Plaintiff's Exhibit 4).

The Witness: There is an old cylinder type machine in the room. It is the third machine, the square tub. That is the type that was generally sold commercially prior to 1922.

(Cylinder machine received in evidence as Plaintiff's Exhibit 5).

A vacuum cup type machine is here in the room. It is the second machine with the wooden legs and galvanized tank.

Q. And to what extent was that type machine sold commercially prior to 1922?

A. There were a number of different manufacturers put out a vacuum machine and they came in competition with us in selling Maytag machines.

(Vacuum cup machine received in evidence as Plaintiff's Exhibit 5-A).

I was speaking about Mr. Snyder's work, trying to relieve the difficulties with the old peg type dolly machine and I believe I mentioned the dolly machine with the dolly near the bottom of the flanges and corrugated interior tubs.

164 Q. What was his next work to do away with the objections to that type of machine, if you know?

A. The next was a dolly with cups which you might call a vacuum cup or a water cup in the place of the peg.

There is here in this room one of the types of machines that I have referred to with both the pegs made of metal and the suction cups. That is the square cast aluminum tub machine, Model 70.

Mr. Lane: I ask that be marked as Plaintiff's Exhibit 7 for identification and the dolly with the flange peg as Plaintiff's Exhibit 7 A and the dolly with the suction cups as Plaintiff's Exhibit 7 B.

The Witness: 1919, I think, is when we put out our first Model 70 with the flange pegs like Plaintiff's Exhibit 7 A. That was sold with that type until the gyratator machine was put out in 1922. I understand about two thousand of those were sold by the Maytag Company.

I believe they started putting out the suction cup dolly like 7 B in 1921. We used those to replace the other dollies. I don't know how many of those approximately were sold by the Maytag Company. Those types of dollies were all used in this same type of tub. The power leg shown on this machine was substantially the same in all these machines. The whole structure was discontinued in 1922 upon the in-
165 troduction of the new type machine, the gyratator. I sold lots of these Model 70 machines myself; I would say a good percentage of what they built and they built two thousand of each.

The difficulty I experienced in the sale of that machine, in the operation of it, was that it didn't wash clean, that

was the principal complaint. In attempting to wash the clothes, they operated that generally about thirty minutes. That was true of both types of construction of dollies.

During that period of time that we were selling peg dolly machines and the cylinder machines, the Maytag Company was in competition with others in my territory; the oscillator, vacuum, disc, rub board type, the peg dolly type, the cylinder machines were sold by others in my territory.

In my territory, I came in competition with the 1900 rub board type machine. The three cuts to which you call my attention, show the 1900 rub board type machine. I cannot fix the exact time when that was being sold in competition with Maytag machines. Well, we have seen them for a number of years; I don't know just when they came out. I saw those machines in actual operation. You put in a load of clothes and you let the lid and the washing disc down on top of the load and the disc worked its way down on to the clothes, rubbed and dragged and scrubbed the clothes against the side walls and the bottom of the tub as well as against the disc rubbing member with its cleats.

I would say there was no water circulation in that
166 machine.

Q. Why?

A. Because of the mass of clothes pushed down into the tub of water and the disc down on top of the clothes, there could not—

Mr. Bristol: I object to whether there could not be as a conclusion of the witness.

The Court: Sustained.

A. I would say there was no circulation or roll-over in any of the machines that I actually saw operated. The driving member slides through the lid of the machine and attached to the disc permitting the disc to work up and down. I never measured how far from the bottom of the tub that rub board came when the cover is closed; I would say about an inch.

Mr. Lane: I will offer in evidence this photograph as Plaintiff's Exhibit 5 C. It has already been identified in deposition exhibits as Plaintiff's Cross Exhibit 5, so it makes it easy to identify.

(Received in evidence).

I had conversations with Mr. Snyder concerning the difficulties in connection with the operation of these various old type machines and their damage to clothes.

Q. What, if any experience did you have, or difficulties did you experience in connection with the sale of these old type machines as to their operation, construction and so forth?

167 A. The dolly type was principally tearing the clothes; that was the largest objection. It was quite general and on the cylinder type it would not wash clean and would tangle the clothes. The rub board type would not wash as it should. That was also true with the oscillator and the vacuum. The dolly was accepted by the housewife as the best known washing principle, up to the time of the [gyratator]. Mr. Snyder was very, very familiar with these difficulties that were experienced in connection with the sale of these machines. There are several of them here. The earliest one with which I am familiar is the square tub with the wringer.

There is one of the new [gyratator] or gyrator type machines here in the room.

(Machine marked for identification as Plaintiff's Exhibit 9).

I first saw that machine or one identical with it in February, 1922, at Milwaukee, Wisconsin. I went there to meet Mr. Maytag at an electric show. I next saw the machine at Minneapolis; I think that was February, 1922. The one that I received at Minneapolis was the first that I operated. When we received the one machine we took it to a home on a demonstration and attempted to use the machine the same as we had the dolly type, filling the tub full of clothes and running it about thirty minutes and we became very discouraged with the operation of the machine; it tore the clothes, wore them badly to the place where when I returned to the office I called Mr. F. L. Maytag and told

168 him of the experience that we had had and he asked me—

Mr. Bristol: I object to that—

The Court: Sustained, don't relate his conversation.

Q. What followed that? What did you say to him?

A. I told him of the trouble that we had experienced and he and the inventor, Mr. Howard Snyder, were in Minneapolis the next morning to put on a demonstration of the new type machine. I explained to them the trouble I had had, at that time; in fact, I had over the telephone the day before.

We had selected garments for him to wash, old lace curtains that we were sure would tear to shreds, wool blankets

and rag rugs and Mr. Snyder asked us to put up a clothes line and he said he could hang these lace curtains and count the holes in the curtains. He filled the tub with water to the water line—he filled the tub with water, put in the soap, started the machine in motion and he placed two lace curtains in the machine and washed them for about a minute and a half to two minutes; took the curtains out, put them through the wringer and rinsed them, hung them over the line and he said "you can count the holes". Well, there were no more holes in the curtains than there were when they were put in the tub. He washed other garments in from three to five minutes that we had been in the habit of washing thirty minutes and from that day on we did not sell anything but the [gyratator] machine.

169 The Witness: The lace curtains were perfectly clean when they were taken out and they were dirty curtains when they were put in, in fact, real soiled. I saw the action of the machine while those curtains were being washed, the lid was left open. They had a free roll-over and were suspended in the water; they did not contact any moving parts in the machine to become torn. The length of time was a minute and a half to two minutes. In fact we decided right then and there before Mr. Maytag left Minneapolis how the machine was to be marketed.

Following that demonstration, we put on home demonstrations to show the housewife how to use the machine. We would take the machine to the home and invite a home demonstration for the purpose of advertising the washing efficiency of our new type machine and we would fill the tub with water and proper amount of soap, start the machine in motion and feed the clothes into the tub as long as the clothes had a free roll-over and would wash garments like lace curtains in a minute and a half to two minutes, rag rugs in three minutes; the average white linens in five minutes, the dirtiest, greasiest overalls and mechanic's clothes in not to exceed ten minutes. We had always run the old types of machines thirty minutes or longer.

170 A cut to which you call my attention and which is marked Plaintiff's Exhibit 9 A is the same as the machine, Plaintiff's Exhibit 9, with the exception of the container for liquid soap that is fastened to the exterior of the machine.

Q. Do you know whether the machines sold of this type, gyrator type, like Exhibit 9 A were marked under the date and number of the Snyder patent since the issue of that patent? A. Yes, sir.

Mr. Bristol: If your Honor please, I object to that—

Mr. Lane: I asked him if he knew.

Mr. Bristol: I am just stating my objection, Mr. Lane, in that it involves two things, neither of which has any basis so far in the record. One is that some machine like this one that the witness has said was put out in 1922 has been put out since the patent issued in 1932 and that is the principal ground of objection to the question. There is no showing that any machine like the Exhibit 9 has been put out as late as the time that the patent issued.

The Court: Overruled, exception allowed.

Q. Were they thus marked? A. Yes.

The Witness: Of the dolly type machine, our hand machine retailed at $10.00, the belt power at $25.00 and the wood tub electric at $65.00. That price was about the same as competitor's prices on those similar machines. We first sold the machines like Plaintiff's Exhibit 9, the gy-
171 rator type at $139.00 for the electric. In later years the price was increased up to $165.00; that was the top price.

We had occasion to leave these machines of the gyrator type in the homes of prospects for longer than the single demonstration. In many cases we would leave the machine for the second wash; our man would help on the first week's washing and the second week the lady could use the machine without the help of our man. We used a slogan in connection with that kind of sale. "If It Doesn't Sell Itself Don't Keep It." Competitors at that time were selling the oscillating machines and the peg dolly type of machine, the cylinder type, the vacuum type and rub board type in my territory. In some towns where we established a dealer and the dealer had a good active sales organization to go in the homes and demonstrate the new gyrator machine, competition lost out; they were whipped out so completely that they had to move on or move out. In those towns naturally the dealers dropped the old washing principles and did not make much effort to sell washing machines because meeting them on competitive demonstrations they would lose to our boys one hundred percent. Competitors soon discarded the old principle and began to manufacture the gyrator type. In our territory, the gyrator type is the only competition we meet; the gyrator type is the only type being sold there.

172 I come in contact with the General Electric machines like the exhibit here in the room, in my territory. I have met that machine in competition with the sale of

the gyrator type machine from, I would say, about 1934 or 1935, somewhere along in there. I can't say the exact year.

In connection with the sale of our new machines of the gyrator type, we have taken in thousands of old type machines of all types; some of them in very good condition; others not so good.

In introducing the Maytag machines into homes, I think that one of our greatest difficulties was the appearances of the machines, it being so small the average housewife or person looking at the machine—

Mr. Bristol: I object to what the average housewife would say.

The Court: Sustained.

Q. Go ahead with any other difficulties you had?
A. The size of the tub, the appearance and the size of the tub, that is, having the appearance of being too small. I think that was the principal objection.
Q. What were the principal advantages possessed by this gyrator type of machine in use as you have actually seen it used, both in connection with demonstrations and in home washings?

173 Mr. Bristol: I object to that unless it is limited to the machine as shown in the Snyder patent in suit; otherwise it is irrelevant.

The Court: Overruled; exception allowed.

(Whereupon, the question was read by the reporter).

Q. I am now, of course, referring to the Maytag gyrator type of machine made under the Snyder patent.

Mr. Bristol: I object to that question as requiring the operation of the mind of this witness on what is made under the Snyder patents. Counsel limited his question to something shown in the Snyder patent.

The Court: Overruled: The remodeling of the question was to meet your objection, I think.

Mr. Lane: That is what I attempted to do.

The Court: Overruled; exception allowed.

A. First, in a store demonstration. The machine could be filled with water and the gyrator set in motion creating water currents showing a free roll-over. We used the machine in the dealer's window, placing a mirror above

the machine with an electric light cast down on the water. You could really see the water action across the street, and the people that walked past the store would stop by the hundreds and see the new washing action in that tub. It created an interest among housewives and their husbands as well.

174 They would ask for a demonstration of those machines. They wanted to see it wash in their own laundry. And when taking it to the home and filling it with water and placing the garments in the tub piece by piece you could see the water action acting upon the clothes. They would travel out at the bottom, up the side walls of the tub and down at the center. There were cross-currents, and as I have said many times there is no living man that can sell the Maytag in any home like it will sell itself on a home demonstration. It will wash a few garments, you might say wash them individually, or it will wash a tubful as long as you have a roll-over and it will wash the garments clean. The trouble we always experienced with the old machines was the washing of the wristbands and the collars. We used to have to rub those by hand; but with this machine we immediately discovered it would wash every garment and wash them clean and in less time. The water currents cause that thorough cleansing of the clothes under my observation. The clothes are not bunched if the machine is loaded properly. They want to be loaded so that the clothes have a roll-over. That is our instruction to our men, never to overload it.

We issued instruction cards in connection with the sale of those machines. I can't tell you just when the first card came out, whether it was immediately or not, but it was shortly after the first sale of these machines. It was substantially the same directions that have been used continuously since we first started. A copy of a little pam-
175 phlet, "Directions for Operating the Maytag Washer", which you hand me was the directions for the old Model "E" machine; the same directions were carried through.

(Plaintiff's Exhibit No. 11 E marked for identification).

(Plaintiff's Exhibit No. 11 E, a Maytag direction pamphlet, received in evidence).

Mr. Bristol: I have no objection to the exhibit being received in evidence so long as it is not received as proof of the truth of any statement contained in it; otherwise, I object to it as hearsay.

The Court: I suspect it is not offered for the proof of any statement contained therein.

(Plaintiff's Exhibit No. 11 B marked for identification).

The Witness: These instruction sheets were sent out with the machines.

In connection with the sale of the Maytag machine there was advertising put out by the Maytag company with which I am familiar. That which has been marked Plaintiff's Exhibit 11 B is one of our early circulars on the gyratator machine. That illustrates the machine, Plaintiff's Exhibit 9.

Mr. Lane: I offer in evidence Plaintiff's Exhibit No. 11 B.

Mr. Bristol: That is objected to as hearsay unless the offer is limited to the circumstances and publication of the physical piece of paper, but without its being offered as proof of the truth of any statements contained therein.

176 The Court: I take it it is so offered. It is received upon that understanding.

(Plaintiff's Exhibit 11 B, a Maytag circular, received in evidence).

(Plaintiff's Exhibit No. 11 C marked for identification.)

Pages 41 to 44 of Electrical Merchandising, May, 1922, to which you call my attention, shows the Model 80 machine, also the water currents in the tub. I first saw that publication shortly after it came out. That refers to the identical machine that is in evidence as Plaintiff's Exhibit 9.

Mr. Lane: I offer in evidence Plaintiff's Exhibit 11 C.

Mr. Bristol: That is again objected to—

The Court: Received upon the same understanding.

(Plaintiff's Exhibit 11 C received in evidence.)

Q. What if any early difficulties did you encounter from your competitors in the industry in connection with the sale and introduction of the Maytag gyrator machine?

Mr. Lane: Your Honor, I have before me in asking that question several cases which gives consideration to the early difficulties experienced in connection with invention, which the question is directed to.

The Court: Can you answer the question?

(Whereupon the question was read by the reporter.)

A. Being talked of as a freak in design.

Mr. Bristol: I object to what they said.

The Court: Overruled.

177 The Witness: And the washing principle and the machine having blades in the bottom of the tub, it was called an ensilage cutter. I think that pretty well covers it. They were selling other machines in competition with us at the time those competitive statements were made; other washing machine principles.

(Plaintiff's Exhibit No. 10 marked for identification.)

That machine marked Plaintiff's Exhibit 10 is a Model 80 with the high center post. That was first put on the market in 1924. The purpose of the high center post was to prevent the machine from leaking. The machine operated just the same as the one that immediately preceded it with the lower center post.

(Plaintiff's Exhibit 10, a Maytag washing machine, was received in evidence.)

(Plaintiff's Exhibit 10 A marked for identification.)

A drawing, marked Plaintiff's Exhibit 10 A, has the same tub and wringer as Plaintiff's Exhibit 10.

(Plaintiff's Exhibit No. 10 A, a drawing, received in evidence.)

(Plaintiff's Exhibit No. 11 marked for identification.)

The machine immediately adjacent to Exhibit 10 is a Maytag round tub Model 15. I can't give you the year we started to build that round tub type. It has been built only for a short time, probably two or three years. The Maytag company has been building machines similar to it of the round tub type for many years. They are the same in appearance.

178 (Plaintiff's Exhibit No. 11, a washing machine, was received in evidence.)

(Plaintiff's Exhibit No. 11 A marked for identification.)

The drawing, Plaintiff's Exhibit 11 A is the same as Exhibit 11 which I have just testified about.

(Plaintiff's Exhibit 11A, a drawing, received in evidence.)

(Plaintiff's Exhibit 11 F marked for identification.)

I think that the document which has been marked Plaintiff's Exhibit 11 F is one of our ads; I am not sure.

(Plaintiff's Exhibit 11 D marked for identification.)

What has been marked Plaintiff's Exhibit No. 11 D for identification is one of our circulars showing the two round tubs and a square tub. That particular model is not the type of machine we are now selling; but Model A was replaced with Model 30. In construction and operation, it is the same, but given a different model number.

(Plaintiff's Exhibit No. 11 D, a Maytag circular, received in evidence.)

Mr. Bristol: The same objection as to any use of this exhibit as proof of the truth of anything stated there.

The Court: It will be received with the same limitation as heretofore stated with respect to similar exhibits.

The Witness: A General Electric machine to which you call my attention, and others of similar operation and construction have been sold in my territory in competition with the Maytag; I think since 1934 or 1935. I have washed with that machine. The operation is the same as the operation of the Maytag machine.

179 Mr. Lane: Under the stipulation and the testimony of the witness I will have marked and will offer in evidence Plaintiff's Exhibit No. 12.

(Plaintiff's Exhibit No. 12, being a General Electric washing machine was marked and offered and received in evidence.)

The Witness: The speed in action of the Maytag gyratator machine is 52 on the square tub, and 54 and 58 on the round tub. The rate of oscillations of the General Electric machine, Plaintiff's Exhibit No. 12 was 64.

Cross-Examination.

By Mr. Bristol:

I said that I was branch manager at Minneapolis for the plaintiff company. I have no other duties for the plaintiff company. The Minneapolis territory covers about 11,000,000 population; the states of Montana, North Dakota, South Dakota, Nebraska, Iowa, Minnesota, and Wisconsin. I have been selling washing-machines in that territory since 1908. That market has been an increasing market.

Q. How does the price of electric current today compare with what the price was in 1908?

A. Well, that would be a rather hard question to answer, I would say, because in some parts of the territory the price may be very high and in others low. That would be just a guess on my part. I would say in the average city it is lower.

180 Q. Lower now than it was then?

A. I would think so.

Q. Do you know of any place in the territory where it is higher now than it was then?

A. No, I can't say that I do.

Exhibit 9 was never received at our place in Minneapolis. I saw that model first at Milwaukee, and next at Minneapolis, but not that particular machine. I first saw one like it in Minneapolis the last of February, as I remember it, or the first of March, 1922. After we had found out how to work it, we sold it, and got more in from the factory; I think it was in March, 1922. We sold them. I couldn't say as to whether we disposed of that second lot by the end of March, 1922. They sold very rapidly. It was just a question of getting them.

We planned a method of selling these machines while Mr. Snyder and Mr. Maytag were with me, and our campaign involved home demonstrations of the machine.

Q. Now, that was rather a novel idea in itself in selling washing machines, was it not?

A. We had never demonstrated with the old machines, the old models. Our plan of selling was to sell the machine outright and get settlement in most cases before it was delivered. It was easier to sell a machine with a home demonstration than it was when we had to get the cash in advance.

181 Q. Did you have any other special features for this sales campaign? How about dollar bills to every housewife who would accept a demonstration?

A. No, sir.

Q. When did that come in?

A. It never came in my branch.

Q. It came in in other branches, did it?

A. Not that I know of.

Q. How much money was spent by the Maytag company for advertising in the first four years of the business?

A. I haven't those figures, but I would say very, very little; practically nothing.

Q. I wonder if you have understood my question. I want to know how much money was spent by the Maytag company

for advertising in the first four years after the introduction of this gyrator machine?

A. I would say very, very little. The fourth year, as I remember it, is about when the newspaper advertising was started; but the first and second years it was practically nothing. It was a case of being able to produce machines.

Q. Can you answer the question? How much was spent in the first four years?

A. I really haven't the figures; I wouldn't know that.

Q. Did you testify as a witness for the Maytag company in the case of Maytag versus Meadows in the Southern District of Illinois?

A. I didn't testify there, no. There was a deposition taken.

182 Q. Your deposition was taken for use in that case?

A. Yes.

Q. When was that deposition of yours taken?

A. That would be just a guess on dates. I wouldn't know. It was taken before the case was tried, of course.

Q. Would that be some time perhaps in June, 1927?

A. I really wouldn't know. It would be just a guess on my part; I don't know.

Q. Or earlier or later?

A. I don't know.

Q. Did you say in your deposition which you gave, "I couldn't state the exact figure or how much money has been spent for advertising in the last few years up to the present time, but I would say that it was as much as Four Million Dollars." Did you so testify in your deposition?

A. If I did, that is correct.

Q. Was that the truth?

A. It was if I stated that; but that wouldn't be at the Minneapolis branch.

Q. That is a direct branch of the Maytag company, isn't it?

A. Yes, sir.

Q. Now, I will ask you the question again. In the first four years after the introduction of the gyrator machine how much money did the Maytag company spend for advertising?

A. I just don't know; I don't remember. I have had the figures, but they have slipped my mind. I don't remember.

183 Q. You were able to remember enough to say Four Million Dollars, in 1927, weren't you?

A. Well, if I did, that is correct, then.

Q. And it was true then?

A. Yes, sir; if it was stated then, that is about right.

Q. So you wouldn't want the Court to get the impression that the advertising of the Maytag company in the first four years was really a very insignificant amount, would you?

A. I know there wasn't much spent the first two years.

Q. You referred to the marking of some patent numbers or a patent number, rather, on some Maytag machines?

A. Yes sir. The patent stencil on the tub will show what numbers were marked on the Maytag machines. There are fourteen numbers marked on there: 1,316,601, September 23, 1919; 1,381,941, June 21, 1921; 1,506,783, September 2, 1924; 1,572,002 February 9, 1926; 1,572,758, February 9, 1926; 1,572,759, February 9, 1926; 1,669,783, May 15, 1928; 1,687,401, October 9, 1928; 1,729,751, October 1, 1929; 1,738,457, December 3, 1929; 1,789,087, January 13, 1931; 1,793,522, February 24, 1931; 1,866,779, July 12, 1932; 1,914,880, June 20, 1933; 1,918,609, July 18, 1933; 1,340,328, May 18, 1920; 1,366,102, January 18, 1921; 1,611,767, December 21, 1926; and 1,748,442, February 25, 1930, and other patents pending. And this is on Model 30 washer No. 604,341W, which is an old model.

184 Mr. Johnson: May I interrupt at this time to ask if it isn't true that four of those numbers you read off were listed below as licensed patents?

The Witness: The last four were listed below the other numbers as licensed patents; they were the last four that were read.

Q. One of the attractive features about this machine when it first came out was the wringer was it not?

A. I wouldn't say so.

Q. Would you say that was an unattractive feature?

A. No; it wasn't one of the most or the most attractive. The most attractive was the washing principle. We covered the wringer on these store demonstrations, putting a mirror on top of the tub; we didn't use the wringer in the demonstrations, we merely used the washing principle.

Q. Did you use the wringer in the home demonstrations?

A. Yes, sir.

Q. Did you show how it could be swung around?

A. Yes, sir.

Q. One of those patents, No. 1,340,328, listed on the patent label as one under which the machine is licensed is the patent of Cooling on the swinging wringer, is it not?

A. That is what this patent says; yes (indicating).

Q. And that is one of the numbers that you read to me from the machine just now, isn't it?

185 A. I assume it is. I haven't the number record here; it is a guess on my part. I could not say as to whether

the Maytag Company has anything to do with patents on swinging wringers—whether they have or not; I don't know what their position is on the patents on the swinging wringer. I have heard of the National Household Devices Company. I don't believe I have ever heard of Mr. Power, trustee of some swinging wringer patents.

Q. You know, don't you, that the Maytag Company at one time at least granted licenses on swinging wringer patents?

A. Mr. Maytag told me they had licensed others on the swinging wringer, yes.

Q. You knew that yourself, didn't you?

A. Well, he told me that.

Q. On of the numbers that you read to me from the machine was 1,316,601, and that seems to be a patent to H. F. Snyder, on some kind of a wringer?

A. Yes, sir.

Q. That was owned by the Maytag company was it?

A. It was "Snyder, assignor to the Maytag Company, Newton, Iowa."

Q. One of the numbers of the patents you read me as those under which the Maytag machine is licensed was 1,366,102. That is a patent on some sort of a yieldable paddle washer, isn't it?

A. Not being familiar with patents like this, I don't know what it is.

186 Q. It doesn't look anything like any structure in that Maytag machine, does it?

A. Well, I really don't know what it covers.

Q. Is there any sort of a flexible paddle in the Maytag machine?

A. In this machine?

Q. Any of the Maytag machines?

A. Not that we are selling.

Q. Has there ever been?

A. A flexible paddle?

Q. Yes, yieldable paddle?

A. Not that I know of, not in my territory.

(Soft copy of patent 1,506,783, marked Defendant's Exhibit 1 for identification).

Q. I call your attention to a copy of patent number 1,506,783 to Howard F. Snyder, this being one of the patents whose numbers you read me from the Maytag machine? Are you acquainted with that patent?

A. No, I am not. That is the same Howard F. Snyder that I was talking about in my direct examination. We have in the Maytag machine a sediment trap very similar, if not

identically the same as what is shown on the drawing of the patent that I have in my hand. I think the space under the gyratator is an advantage for a dirt trap. We have always claimed that for it. We have featured that quite extensively in our advertising. The sediment trap was on the first machine; the spacing under the gyratator was the same;
187 it was never changed.

Q. Will you take a look at the Plaintiff's Exhibit 9 and tell me whether the sediment trap is on that?

A. Yes, that is the same as the other models as far as this trap—the spacing under the gyratator.

Q. Is the agitator on Plaintiff's Exhibit 9 counter-sunk into the bottom of the tub?

A. No.

We counter-sank it into the bottom of the tub a little later; I believe it was in 1923; it might have been late 1922; I am not sure.

Since that counter-sinking of the agitator into the bottom of the tub was started, it is used on all Maytag machines; everyone since it was started. Recessing the gyratator in the bottom makes a flush connection with the gyratator and the tub well and makes a better job. I think the only advantage is the fact that the gyratator operating in the recess in the bottom of the tub, there would be less danger of anything working under the gyratator, that is a garment or anything like that or a string. It makes a neater job, a better job. I would not say that we had any trouble with machines like Plaintiff's Exhibit 9 due to clothes getting caught under the gyratator, in our territory.

Q. And not in anybody else's territory either?

A. No, sir, not that I know of. I don't know what the other's experience was.

188 Q. Then why did they put that counter-sinking in?

A. Well, I just think it makes a better job, a neater appearing job and a better job in building. That would be my way of analyzing it. It is a definite sediment trap under the gyratator.

Q. And that helps to keep the clothes from catching under the gyratator?

A. I would not say that it did because other machines were built without it. We built one without it. Those machines are still in use; there is no complaint on it.

(Defendant's Exhibit 2, copy of Cooling patent 1,340,328 received in evidence.)

Q. Now, the label that you read from when I asked you to read the number of the patents listed on the Maytag machines has that label or something like it been used over any period of time by the Maytag Company?

A. Yes, I think on all the machines that we built of the gyratator type.

Q. What is your idea of the machines that are covered by this Snyder patent here in suit?

A. What is my idea of the machines?

Q. Yes.

A. I think it is the greatest machine in the world.

Mr. Bristol: Read the question please.

(Last question read by the reporter.)

The Court: That question is not very definite; it permits almost any sort of answer.

189 A. I say it is the greatest machine in the world, undefeated in washing principle and type. I understand the Maytag Company has put the number of the Snyder patent here in suit on all its gyratator machines since the patent was issued. I have seen them on a number that I looked at; I have seen the number on a number of machines I have looked at.

The Court: The question is as far as you know has it been placed upon all the gyratator machines since the patent was issued?

A. Yes, I am sure it has, and that is whether they have high center post or low center post; they are the same, and whether they have dished agitator bases or not, there would not be any difference.

I don't know how long since the Maytag Company made a dished agitator; I don't know when we changed.

Q. You know that the Maytag Company has changed, don't you?

A. The shape of the agitator has changed is all.

Q. Quite completely?

A. I would not say quite completely, no.

Q. Well, just tell us what the changes have been?

A. In the bottom of the agitator, the dish shape, that has been changed.

Q. What else has been changed?

A. Well, maybe a little of the shaping of the top of the
190 fin. On the later model it has a straight or flat surface on top, you might say. It would be easier to clean

it in the machine shop when polishing. The same is true in regard to the bottom.

Q. Is this agitator which I have just taken from that Model 30 machine the sort of agitator that the Maytag Company is using now?

A. No, I don't believe it is; no, I think there was a little change on this.

Q. Even since that?

A. Yes, they cut off this part here. Well, the first agitator was dished shaped at the bottom a little bit and the fin was [dish] more at the top, a more difficult job in polishing and cleaning. This has been straightened out. Then the gyrator base at the bottom is cut off, the stem we call it and I think otherwise they are the same or about the same.

Q. Which is the easier on the clothes, the agitator from this Model 30 or the agitator in your old model original Gyrofoam Model?

A. I would say there would not be a difference.

Q. Tell me what is the purpose of changing the slope of the vanes on the agitators so that they slope continuously downward from the inside toward the periphery?

A. I think that was just to overcome a manufacturing problem; it is a die casting. I do not think the agitator from the old machine would be any harder or any easier on
191 the clothes than the agitator from the Model 30. The high center post was to prevent leaking at the bottom of the tub. I had some trouble with leaking. In the old original machine packing was supposed to prevent leaks. That was located around the drive shaft that went through the bottom of the tub.

Q. And how long had the machines been on the market before the leaking trouble developed?

A. In some machines leaking trouble never developed; a small percentage of them we probably heard from the first year.

The Maytag Company discontinued the low center post in 1924. I would guess it would be the fall of the year. I remember we had a meeting and I don't remember—I am sure it was in the fall of the year. The meeting was at the factory. Our entire sales organization from Minneapolis was present. It was not discussed at the meeting at all but I remember of having placed a few of the high center post assemblies with some of our dealers prior to that meeting and I am pretty sure it was the fall of the year. Those high center posts assemblies that I placed prior to this meeting were satisfactory. There was some objection first to the post in the tub but after they installed them in the machines they were

all right. I would not say they liked them better. We had many of the dealers and salesmen that preferred the former type. Nevertheless the Maytag Company discontinued the low center post in favor of the high center post to eliminate trouble.

192 (Patent 1,693,003 marked Defendant's Exhibit 3 for identification.)

Q. I show you a copy of the Snyder patent 1,693,003, and ask you how the drawing of that compares with the packing arrangement that was on the old machines?

A. Figure 1 looks just like the packing assembly that was used on the early machine. We used a graphite packing and a screw to force the packing around the shaft. That was discontinued after that meeting in 1924.

Q. The Maytag Company owned that patent and still owns it, does it not?

A. I could not say as to that. I suppose they do.

That meeting was just a sales meeting, getting our men together, you might call it a pep meeting. How many were there, would be just a guess on my part; I don't remember just how many men I had at that time. That was in 1924. My best recollection of the number of men I had at that time under me is probably twenty-five or thirty; it might be more. Twenty-five or thirty would be a guess. (Defendant's Exhibit 3 received in evidence). I am not sure whether my territory then was the same size as it was for the next couple of years. My territory has been changed from time to time; it has been enlarged.

Q. Why has it been enlarged?

A. Well, just our plans seemed to fit in with handling the adjoining territories.

193 Q. You have had pretty good results in producing sales of Maytag machines, haven't you?

A. Pretty fair. That probably has something to do with the enlargement of my territory.

Q. How many dealers and sub-dealers in your territory in those days handled Maytag machines?

A. That would be just a guess. I would not know. I didn't have close to 3,000 dealers and subdealers; not at the Minneapolis branch. Probably at the factory. I say they probably had that many at the factory at that time. I don't remember what they did have at that time.

Q. Didn't you testify in 1927 in the case of Maytag versus Meadows "I would say that we have close to 3,000 dealers and subdealers."

A. That is possible. If that is what I testified that is what they had at that time because I knew at that time that that is what it was.

Q. That is quite a sizeable sales force, isn't it?

A. Not for the United States, no.

We have 1700 in the Minneapolis territory today. In our branch, we help the dealers in hiring men; the dealers pay the men; we do not furnish any men for the dealers. I think back in 192[illegible], 1925 and 1926 we ran about 1200 men helping the dealers. I think that was our top. It would be just a guess as to how many men were calling on customers every day at that time all over the United States. I would not know. In our branch, I think we ran close to 1200 at that time, as I remember it. I think that is about right. It might have been more, it might have been less.

Q. They were taking machines out every day to leave them at the homes for demonstrations?

A. Taking them out and demonstrating them, yes, sir. They did not have any fancy displays on the trucks. Very few trucks were used. In most cases the men just used their cars with a rack on the back of the car to haul out the machines. Some cars had the lettering "Maytag", the word Maytag on the box of the car.

We had meetings at the factory usually twice a year.

Q. That was just for your branch or for all branches?

A. It varied; some years for our branch; other years for the entire United States.

The re-salesman was a man that worked for the dealer. The dealers, with the help of our dealer contact man would hire these men and give them the training that they got. We had no means of training men at the factory or at the branch.

I got out a paper called "The Bones Booster" from time to time; it was merely a house organ to give the boys the news of the branch.

Q. And the pep?

A. Well, I would not say there was much pep in it.

Q. Contests to spur them on?

A. Very few contests. We did have some.

My territory was divided into districts. The number of districts in my territory varied from time to time; sometimes we would change twice a year; other times we would go through a year without changing. I think the most would

probably run maybe seventy-five or eighty districts, something like that. We had contests where each district had three regular prizes and a grand prize to the high man in the branch. I cannot tell you what that suit brought by the Maytag Company against the Meadows Company was aimed at. I am not that familiar with it that I could tell you. I know what the result was; the Maytag Company lost the case.

Q. And Maytag got a judgment against them for $500,000.00 for unfair competition, didn't they, and got that reduced to $250,000.00?

A. I could not say what the settlement was; I have no idea.

Q. You know about the $500,000.00 judgment against the Maytag Company, don't you?

A. No; I never knew there was a judgment like that.

196 (Patent 1,572,002 marked Defendant's Exhibit 4 for identification.)

Patent Number 1,572,002, to which you call my attention and which is one of those listed on the patent tag, patent label of the machines and has been marked Defendant's Exhibit 4, looks like the head of the wringer that is used on our cabinet machine, cylinder type. Yes, it was.

Q. Is it the Maytag Company practice to mark on one machine a patent covering something that is used on a different machine?

A. I could not say as to that; I never checked it, I don't know but that is what it is, I am sure.

(Defendant's Exhibit 4, patent 1,572,002, received in evidence.)

This is our cabinet wringer off the cylinder type machine.

Q. And not off the gyratator machine?

A. Well, the wringers would work on either machine. I believe it was Model 52 cabinet would work on the Model 70 machine. The wringers were interchangeable on those machines.

I read this label off of a Model 30 machine. This wringer did not look like the wringer on Model 30, this wringer of this patent, but the wringer off the Model 52 cabinet will fit on the Model 30 or the 30 wringer will fit on the cabinet.

This patent, Patent 1,611,767 marked Defendant's Exhibit 5 for identification, which is one of those included in my list as a patent under which the Maytag Company is licensed, is an oscillator machine.

197 Q. Would you just be good enough to take that patent over to the same machine that you read the list from before and verify the fact that your machine is marked licensed under that patent, for me?

A. That is one of the last four patents listed.

The machine that has been marked in evidence as Plaintiff's Exhibit 11 has got a patent notice tag on it. This patent 1,611,767 is also listed on that label. That Exhibit 11, that machine is not an oscillating type machine or cylinder type.

I verify the fact that the patent to Davis, Number 1,748,442 is also listed on the patent notices on each of these machines; that is listed as the last one on both machines.

(Patent 1,748,442 marked Defendant's Exhibit 6 for identification.)

The construction shown in the drawing thereof, this patent to Davis Number 1,748,442, looks like the machine put out by the 1900 whirlpool.

Q. Was that a gyratator machine?

A. I don't know what you would call it. It has a disc in the bottom of the tub with one fin on it.

Q. That was sometimes referred to as the single vane agitator machine, was it not?

A. They called it the Whirlpool.

Q. Will you answer my question please. I didn't ask you whether they called it something else; I asked you if
198 they called it a single vane agitator?

A. It might be called an agitator, yes.

Q. A single vane agitator was the question?

A. Yes, you could call it a single vane agitator?

Q. Did the 1900 call it a single vane agitator?

A. No; they called it the Whirlpool.

Q. Didn't they also call it a single vane agitator?

A. I never heard it called that; they might have.

I know they made such a machine, for a short time. The Maytag Company made a single vane agitator machine. They discontinued it. We discontinued it because, I would say, it was not practical; it did not work right. I have no idea why the number of this single vane agitator patent is on the patent notice attached to our Model 30 Maytag machine.

Q. What is your function at these factory meetings when you get all the salesmen in and pep them up?

A. We usually make trips through the factory and see the machines.

Q. I mean your personal function, what part do you take?
A. Well, it varies; some meetings we have the meetings at the hotel or at the factory assembly room where they all get together.
Q. What do you do for them? Do you get up in front and harangue them?
A. Usually go over what we term problems that we have in merchandising.

199 I sometimes lead the discussion. I usually talk at most of the meetings we have.

Q. Do you ever talk about patents at those meetings?
A. No, sir.
Q. Did you ever used to?
A. Not that I remember of, no, sir.
Q. Didn't you say at one of those meetings that the Maytag gyrator machine was covered by patents and that the Meadows patent infringed it?
A. I never remember making any statement at any meeting about Meadows or about any other competitor.
Q. You limit that memory to in the meetings. Did you ever say it somewhere else? A. Not that I know of.
Q. You never made any statement to the effect that the Maytag Gyrofoam machine was covered by patents and that the Meadows patent infringed those patents?
A. I don't remember of it, no, sir.

I do remember that Maytag lost the case.

Q. Now, on your direct examination you spoke about the loading of the tub or rather you spoke about washing in the Plaintiff's Exhibit 9 machine, anything from an individual piece of clothing up to a full tub load. Have I quoted you correctly? A. About loading the machine?
Q. You spoke about washing with that machine anything from an individual piece up to a big tub full?
A. I don't think you heard me say anything about a big tub full.
200 Q. I understood you to say that one of the advantages was that it would wash a few clothes or a tub full, as long as you have free roll-over? A. That is correct.

The first machine had no water line. You could fill the tub clear full on the old Maytag but with the center post you can go above the water line and the water will go down into the gear mechanism. There is danger of water going down into the gear drive so they have a water line on that machine, as you have on yours. A tub full was a sufficient amount of gar-

ments in the tub when the machine is in operation so you have a free turn-over, free roll-over.

Q. Can you tell us how much that meant in number of pieces or pounds or anything that we can get a little more definite idea from?

A. We never measured in number of pieces or in number of pounds. In fact, I have never weighed the clothes at any time in washing. In some cases I might wash one pair of overalls or coveralls, in other cases I might wash two pairs; I might wash two lace curtains but I will wash them in a minute and a half or two minutes.

I would never wash four sheets. There is not a machine built today that will wash four sheets without overloading.

201 I have never weighed four sheets. It would depend on the size of your sheeets. You might have them for a single bed or a double bed, you might have a long sheet or a short sheet, you might have a fine linen or a heavy linen; it is pretty hard to say; it would be just a guess. I would not even guess. I never have weighed four sheets. I don't remember ever seeing an ad of the Maytag Company that their machine would handle a big tub full of clothes. They might have. We used to, on the old dolly machine and the cylinder, we used to ask them to crowd the machine full, jam it full, close the lid down and turn on the power.

Referring to my first experience with a machine like Plaintiff's Exhibit 9, we put in a tubfull, and we tore them to pieces, damaged them very badly.

Q. How much water did you have in the tub?

A. I would say about the right amount.

(Defendant's Exhibit No. 7 marked for identification.)

Q. Do you recognize these directions for operating the Maytag gyrofoam washer which I now hand you, marked Defendant's Exhibit 7?

A. I recognize the cut of the machines. I don't know about the printed matter. That would be just a guess. It is possible that is what the Maytag Company, the plaintiff in this case, put out prior to 1924, on account of the packing box; that was discontinued in 1924.

202 Q. Now, I call your attention to a statement on the second page of this circular, which reads as follows: "Don't go by any directions as to just how many clothes to put in at a time. You yourself are the best judge, as you can easily tell if there is a free action that will carry the clothes over and over; for instance, if eight sheets are to be washed, they may be washed quicker and more thoroughly by dividing them and washing four at a time."

A. That was used for a comparison on load; yes. As an example, if you had fifty sheets to wash it would be better to divide them into small loads, but never to put in a load where you wouldn't have the free turn-over.

Q. Doesn't the statement that I just read to you amount to an instruction to divide eight sheets into two loads of four each? A. I wouldn't say so.

Q. Just read that language over again, please.

A. I would say that would be an example where you can divide into smaller loads. You might find a sheet that would work all right. There is a difference in sheets.

Q. When you loaded that machine, Plaintiff's Exhibit 9, up with a tubfull of clothes did it wash in accordance with the principle you are talking about?

A. When we loaded it properly; yes, sir.

Q. No, I mean the first time you loaded it?

203 A. No, sir; it did not.

Q. What I am trying to get at is this: How much clothes do you have to put in in order to get away from the action of the machine according to the Gyrafoam principle you have referred to?

A. That would depend entirely on the size of the garment and thickness, not put in more than a sufficient amount to still retain that free roll-over. If you overload it you kill that washing principle, and with rag rugs or lace curtains or fragile garments it will soon injure the garments because you are pulling them by the gyrator. It is just like feeding a threshing-machine, there is [—] proper way of feeding. That is what we must do in washing.

I was asked about Plaintiff's Exhibit 11, the Model 15 round tub Maytag machine. I am not quite clear when it went on the market. It would be a guess. I can't remember the date. It was longer than within the last two or three years. They built a copper tub, then we came out with Model 15. Model 15 was replaced with Model 10. We are building Model 10 today. I believe it was in 1932 that that was put on the market; I think that is correct.

(Defendant's Exhibit No. 8 marked for identification.)

Q. Will you refer, please, to the Anderson patent, No. 1,572,759, which is one of those listed on the patent

204 notice? Will you refer to the drawings of that patent and tell me whether they show anything that is used on the Maytag machines of the type on which the notice appears?

A. Yes, it looks like the roller water remover used on the square tub machines. We used the soft upper roll and

the firm lower roll permitting the upper roll to flex itself over the lower roll, making a perfect drain, the same as a hard surfaced road, instead of being soft to carry through water with a bunch of clothes, a feature that helps to sell the machines.

That is a very good feature; it is very outstanding on a Maytag roller water remover. I would regard that as a valuable patent. I don't know what the company would say. I think that is owned by the Maytag company.

(Defendant's Exhibit 8, Anderson patent 1,572,759, received in evidence.)

Q. Has that helped out the sale of the machines since it was developed?

A. I don't know as it has helped out the sale of the machine. I know it has helped to satisfy customers, not pulling buttons off and tearing the garments as was the case with the smaller rollers. It gives you a larger feeding throat. It will take a larger mass of garments in at a time.

I imagine th: first round tub Maytag machine was put on the market about 1927 or 1928, along in there. That did not help the sale of the product any.

205 Q. Did you sell less machines after you put that on the market than before?

A. The first one put on the market built by the Maytag company was not sold by our organization at all. That was the Frederick, and I have always said it was the worst move we ever made to come out with the round tub machine. I always thought we should have stuck to the one model.

We are selling a number of models now. I couldn't say as to whether the company in that respect is acting against my advice; I imagine they are, because I have advised them a good many times on that. They are selling four models all told. We sell one square tub and three round tubs. As to the proportion of sales of round and square tubs in my territory, we run over seventy-five percent of square tubs. I couldn't say how the total business of the company is divided as to round and square tubs. That percentage in my territory is in number of units.

(Snyder patent 1,789,087 marked Defendant's Exhibit 9 for identification.)

Q. I hand you a copy of Patent No. 1,789,087 issued to Mr. Snyder and ask you if you can identify that as having anything to do with the square tub machine of the Maytag company? A. Would it be the hinged lid?

Q. Yes, that is what it is.
A. That is right; that is a very good thing.

We don't use that on the round tubs; only on the square tubs. The especially good feature about this is that it
206 gives you a tray when you open the lid and it is always in place. It is easily opened and closed and it drains into the top of the tub. That hinged lid was on the machine as I first saw it, in 1922.

Q. Was it on the machines that you sold very early in the game?
A. On what machines are you referring to now?
Q. Maytag square tub machines.
A. Early in the game with me was 1908.
Q. You didn't sell Maytag square tub machines in 1908?
A. No, but we had a hinged lid on the wood tub machine at that time.

Confining myself to our sales of machines with the bottom agitator and the cast aluminum tub, the square tub type had the hinges; the round ones didn't.

(Defendant's Exhibit 9, Snyder patent, 1,789,087, received in evidence.)

(Copy of Snyder patent, 1,793,522 marked defendant's Exhibit 10 for identification.)

The construction shown in the drawing of Patent No. 1,793,522 to H. F. Snyder appears to be the lug for fastening the leg onto the tub. That construction was used in the Maytag Gyrofoam machines. It has always been used on the Gyrofoam machine. It is still being used. I think it is a very good feature. On the early cast aluminum tub machine we drilled either four or five holes through the tub to fasten one leg, where this bracket for the leg attachment is cast and made a part of the tub, eliminating any possible dan-
207 ger of leakage. That solved the problem of leakage from the leg mountings.

(Defendant's Exhibit 10, copy of Snyder patent 1,793,522, received in evidence.)

The first bottom agitator machine, Plaintiff's Exhibit 9, operated at a speed of 50 oscillations per minute. Well, I say 50. That is what we counted on this one here. 52 is what it is supposed to be on all square tub machines. There is a little variation when you use a "V" type belt, especially when you use the one we did along with a steel stamped pulley. That does make appreciable difference in the action

of the machine. The first and only trouble that we ever had in the field with the gyratator machine was when we started using the "V" belts and the manufacturer of the pulley gave us the wrong size, and it ran the machines four or five oscillations per minutes slower than it should have been. We immediately began to hear from those machines. The water currents set up in the tub weren't powerful enough to lift those garments as they should have. We corrected that by putting on the proper pulley and never heard a word from that day to this on the machines.

We use a little higher speed in the round tub. I say the low limit of speed at which you could run it to get what we call the Gyrofoam principle would depend on the load of clothes you are washing.

You want to know what the lowest speed is and still retain the Snyder principle of roll-over or water action? You may
208 set a very low speed and still in the tub you would see that roll-over, but it would depend on the load of the garments you put in whether you could retain it or not. If you didn't have any garments in it and had colored rubber or tracer cloth, maybe a slow speed would give you that same turn-over, but it would pick up a load, it wouldn't take much of a load to kill it. That is why the lower speed at the time we put on the "V" belt drive caused trouble. We didn't go down only four or five oscillations per minute until we heard from the machines. When we stepped it up to what we call the normal speed for that machine, everything was fine and dandy. Forty oscillations will give you the roll-over in a Maytag machine. I don't know with how much of a load that roll-over will continue. I never tested that. My experience with the belt deal and with the competitor who came out with a selective speed was sufficient to tell me that we have the correct speed.

Q. For instance, if you run at a low speed and a very light load you still get the outward, upward, inward, and downward turn-over; is that right?

A. I would say yes you would get the turn-over at a slower speed and it depends entirely on the gyratator load.

And then if you increase the load without increasing the speed, it will go down to the bottom; the water currents wouldn't lift it, they wouldn't be suspended in the water. Supposing the speed is increased when that point is reached, they would lift right up; they would go to floating.

209 Q. Then your definition really of the Snyder principle that you have referred to a number of times, or the Gyrofoam principle is that combination which gives you the [cirulatory] action of the water outward from the impeller, upward along the tub, inward toward the center and downward on to the agitator again and at the same time moves the clothes around in that sort of path, is that fair?

A. It gives you a good roll-over motion. Out at the bottom, up at the side wall of the tub, in at the top and downward at the center and out.

I would say that the clothes in the Maytag Gyrofoam machine come in contact with the gyratator but no substantial contact.

(Document marked Defendant's Exhibit 11 for identification.)

A paper which has been marked Defendant's Exhibit 11 for identification shows the power drive on the Maytag square tub machine driving the gyratator and also drive to the wringer. It is a worm gear drive. It shows the wringer form, the roller water remover, caster, electric motor with the pump, gasoline engine and a complete picture of the machine and the words "Maytag, The World's Finest Washer." I could not say as to whether this representation of the agitator is a correct representation of the design that is being used now. From appearance, yes, but as I said before, the bottom is probably changed on the stem. From appearance it looks to be about the same. This shows the adjustable legs also.

210 (Defendant's Exhibit 11, a circular, received in evidence.)

We started the adjustable legs back in the days of the wood tub machine. The Model 40 electric wood tub, and we have used them ever since on all of the aluminum tub machines, the square tub aluminum. I regard those as an advantage to adjust the machine to the proper height of the operator, level it on an uneven floor, set it at the proper height for stationary tubs, take the legs off, the extension part for shipping; it boxes up in a smaller crate. That is just one of the qualities that is built into the Maytag for the purpose of making it salable; that is what we sell them for. The only competition that we are up against at the present time in my territory is the gyrator machines.

Redirect Examination.

By Mr. Lane:

We have sold in my territory, I would say, between 550,000 and 600,000 machines of this gyrator type.

Q. Now, Mr. Bristol called your attention to certain portions of your testimony in the Meadows case. There you stated, according to this record he has just handed me: "Our advertising agents coined that slogan 'If it don't sell itself don't keep it.' In arranging home demonstrations we would always tell the customers they were not under obligations at any time in permitting us to demonstrate, and if they were not thoroughly sold on the machine they were under
211 no obligation to keep it. It was merely our form of advertising to further the sale of the machine. In addition to this demonstration we advertised but not other than our circulars the first two years that we built the machine. That is, I would not say not any, but if any, very little advertising." Is that in correspondence with your understanding at the present time? A. Yes, sir.

Q. Now, in that same connection and from the same page where Mr. Bristol read you said "Our national campaign did not start until later. Before the national campaign of advertising started the other resistance had been broken down to some extent by reason of this method of selling the machines by home demonstration, and there were increased sales. The national advertising campaign started approximately 1923 or 1924. Our main advertising was home demonstrations; the next was newspaper advertising." Is that your present recollection?

A. Yes, that is right.

Mr. Lane: I am not quite sure that I offered in evidence these various exhibits, but I would like now to be sure that they are offered in evidence, if the reporter may make note that all I have referred to, with the exception of one,—that was one the witness did not identify, it was 11 something, I have forgotten, but all the others, if they may be marked as offered in evidence, there having been no objection made to them at the time.

212 Q. Now, Mr. Bones, your attention has been called to a large number of other patents and the swinging wringer patents particularly stressed at the outset. Were those swinging wringer patents used on the old type machines that you were making as well as the cylinder and the peg dolly and the flange dolly and the suction cup dolly machines?

A. Yes, sir, all of our machines since 1912.

They are simply incorporated as one of the features that carried over from the old machines. In regard to these other machines, I do not purport to know what the patent claims covered in any of those patents to which my attention was called. I did not look at the claims at all to know what was in them or to know what they covered or purported to cover.

As to advertising done during the first of the years 1922 and 1923 and the early part of 1924 in my territory or elsewhere with the Maytag Company, there was very little advertising; a few advertisements in trade papers like Hardware Age. Competitors first began to come into the field with this gyrator type machine in 1925. I would say the advertising policy in my territory was determined some by the competitors coming into the field.

General Electric motors have been used on the Maytag machines of both of the peg dolly, flange peg dolly, the suction cup dolly and the cylinder and the gyrator types. Up
213 until the time they came out with a machine. Most of the motors that we used on all these machines were purchased from the General Electric Company. There were a few odd cycle motors bought from the Marathon, and I believe a few from Robbins & Meyers.

Q Did the General Electric Company engage in the manufacture and sale of washing machines during the time in which they were selling motors to you, to your Maytag Company, as far as you know?

A. I don't know just when they did start or just when we made the break on motors but it was about that time. During the period previous to 1930, as far as I know, they never made or sold any of these type washing machines of their own manufacture. The general Electric Supply Company did not sell any during that period of time that I know of.

Q. What was the main thing that you stressed in the sale of these Maytag washing machines of the gyrator type, from the time they were first put upon the market in connection with the sale of them?

A. Home demonstrations.

Q. Yes, but what thing about the machine did you stress?

A. The washing principle.

Q. Can you go more into detail what you stressed?

A. That it would wash clean and quickly; it did not take as long as it did with the old type machines. In fact, the boys used to claim that they could do the washing in less than half the time that they could with any other principle.
214 Q. What did you find out in actual practice in that regard? A. That is what we did find out.

Q. What did you stress in regard to the action of the water?

Mr. Bristol: I object to that as leading.

The Court: Overruled.

A. Washing by water action.

Q. Did you rely upon these various patented things that Mr. Bristol called your attention to in connection with the sale of these machines, to any great extent?

A. No, sir.

Q. Where these features advertised to any great extent in any of the advertising that you saw in your territory other than washing principle or manner of washing by water action?

A. No, I would not say that they were advertised. The roller water remover has probably been advertised more than any other one thing.

Q. That is, you don't mean it was advertised as much as the water action itself?

A. No. The water action, the new principle of washing, is the one outstanding quality of the machine that is responsible for our success.

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215 Tuesday, November 30, 1937.

Recross Examination.

By Mr. Bristol:

Purchases of electric motors from the General Electric Company extended back before the time when machines like Plaintiff's Exhibit 9 were first made. Personally I never tested the speed of those motors but I think they were stamped 1750 R. P. M.

When I was making reference to the 1900 machines with which I came in competition before the advent of the Maytag Gyrofoam machine I was referring primarily to the wooden tub 1900 machines, there were more wood tubs than others.

(Witness Excused.)

Mr. Lane: I would like to offer in evidence the exhibits which have been marked for identification as follows:

Plaintiff's Exhibit 7 is a Model 70 washer, Plaintiff's Exhibit 7 A is the flange peg dolly machine; Defendant's Exhibit 7 B the vacuum cup dolly, Plaintiff's Exhibit 9 is the

early gyrator machine and Plaintiff's Exhibit 9 A is the cut of that same machine.

(Plaintiff's Exhibits 7, 7 A, 7 B, 9 and 9 A received in evidence.)

216 Mr. Johnson: Mr. Bristol, in the stipulation which has been marked Plaintiff's Exhibit 2 and read to the Court, reference is made to washing machine Model AW-19 as having been sold by the General Electric Supply Corporation in the Western Division of the Western District of Missouri from its regular place of business after the issuance of the Snyder patent and before the filing of the Bill of Complaint herein, and it being recited that this is the machine which has been exhibited to counsel for the defendant. Will you agree with me that that is Plaintiff's Exhibit 12 that has been offered in this case?

Mr. Bristol: Yes, Plaintiff's Exhibit 12 is the machine which has been previously shown to me.

Mr. Johnson: And it is agreed that that was sold from the General Electric Supply Company's place of business in Kansas City?

Mr. Bristol: It is agreed as stated in the stipulation.

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217 Roy A. Bradt, of lawful age, being produced, sworn and examined as a witness on behalf of the Plaintiff, testified as follows:

Direct Examination.

By Mr. Lane:

My name is Roy A. Bradt, residence Newton, Iowa. I am an employee of the Maytag Company. I am forty-four years old.

I first went into the employ of the Maytag Company on the 3rd of January, 1916; my first work was in the machine shop as a machinist; on November 11 of the same year, 1916, I was transferred from the machine shop to the office and went into the sales department. I remained in the sales department until the 28th of April, 1918 at which time I went into the Army and went to France. I returned from France and was discharged on the 5th of August, 1919. I went back into the office on the 1st of September, 1919 in charge of the sales and advertising department and I have been in that work and in continuous service since that period. I have at all times had to do with the advertising and sales since I went back, the 1st of September, 1919.

The principal business of the Maytag Company since I first entered its employ in 1916 has been the manufacture and sale

of washing machines. During the time I was connected with the company, they engaged in the sale of first the dolly type machine, next the cylinder type machine which they put out in 1917 and later on the gyrator type machine. As to
218 operation of these dolly type machines that were sold by the Maytag Company during the time that I speak of, to begin with the water and soap was put in the tub, then the tub was filled with as many clothes as it would conveniently hold, then the lid which contained the dolly on a slideable connection was put down and the dolly dropped down and penetrated this tub full or mass of clothes; when the dolly was started to oscillate first one direction and then the other the pegs of the dolly or protrusions would grab the mass of clothes as a whole and twist them around in the tub, rubbing the clothes on the interior corrugations of the tub. In all of our peg dolly type machines the interiors were corrugated, both the sides and the bottom.

The sales department received a great many complaints from the users and owners of the Maytag dolly type machines, complaining about the way they tore clothes and the way they wore them, sometimes in spots, and practically all those letters came to me for handling even when I went into the office before I left in 1918 I had those letters to handle. I discussed those things a great many times with Mr. Snyder, the inventor. Those complaints were answered by telling the user that this was one of the shortcomings of the dolly type machine and there was no way to avoid it other than not to wash delicate fabrics or anything that would be easily torn or twisted in that type machine, in spite of the fact that the dolly washer was then the best washer on the market. A
219 great many times Mr. Snyder discussed with me at that time his attempts to improve that situation and to relieve the difficulties existing in the dolly type machine. I had a great many discussions with Mr. Snyder about these letters of complaint that it was necessary for me to answer.

He told me that he recognized the difficulties with this machine but he did not know how to overcome it; that this was one of the inherent weaknesses of the dolly type machine and the only thing we could do would be to warn the user not to wash certain fabrics in it and during that time I watched Howard Snyder make four or five attempts to do away with this very drastic action between the dolly and the clothes. The first attempt was in the 1915 machine which I saw in 1916 when I first came there. The next attempt was to make a cylinder washer which would do away with the very harsh action and the destructive effects of the washer on the clothes and in 1919 he devised a different shaped dolly; instead of

having round pegs he had long thin protruding pieces of metal, and again the following year the development of a vacuum cup type dolly which he thought would reduce the drastic contact between the dolly part and the clothes and reduce the possibility of tearing. Mr. Snyder took out a patent on that particular machine of 1916. The Snyder patent No. 1,209,893, December 26, 1916, is the machine I have reference to and the patent illustration shows a round cast aluminum tub with corrugations on the inside and outside of the tub. It has a cone shaped bottom with corrugations on
220 the inside of the tub as well; it has a center post. The centerpost, down at the bottom of the tub is a dolly with flanges or metal pegs protruding upwardly for the purpose of grabbing the clothes and twisting them and turning them around and rubbing them on the interior corrugations of the tub. Snyder built one of those machines about that time. I did not see it in operation.

(Copy of Snyder patent Number 1,209,893 marked Plaintiff's Exhibit 13 for identification and offered in evidence.)

That machine was never made and sold commercially by the Maytag Company, because it was not any better washer than the other dolly machines on account of the corrugations; the drastic contact between the dolly and the clothes and also because the cost of the making of the aluminum tub was so much higher than the wood tub washers on the market which we had to compete with.

I have also spoken about an attempt to change the peg dolly type from the wooden dolly to the flange peg dolly. Mr. Snyder took a patent out on that form of structure. The Snyder patent Number 1,644,959 shows that structure.

(Patent of Snyder Number 1,644,959 marked Plaintiff's Exhibit 14 for identification and is offered in evidence.)

The Maytag company sold that machine; about 2100 of those machines were put out commercially. I saw those
221 machines in actual washing operation. The result so far as comparison with the peg type dolly machines that we had sold, and the wooden tub machines, was not particularly satisfactory because it took so long to wash on account of the absence of corrugations on the inside of the tub. That machine was sold by the Maytag company for a period of about two years; not quite two years; the years 1920-1921. Previous to that time the peg dolly machine had by far the largest sale in this country.

I do not know how many cylinder machines were sold by the Maytag company, but I think it is a matter of record that

I could produce. The sales of those were very small compared with the peg dolly type. I saw those operating in washing clothes. From twenty-five to thirty-five minutes, and even longer with dirtier clothes was the length of time usually taken in operating that machine. That machine is not being made at the present time; that was discontinued in 1922.

The machine with the flange peg type dolly was discontinued by the Maytag Company in 1921.

(Plaintiff's Exhibit No. 15, copy of Snyder patent 1,714,894, marked for identification.)

I have spoken of a vacuum or suction cup machine of Mr. Snyder's. The illustration in the Snyder patent of May 28, 1929, No. 1,714,894 shows the vacuum cup type dolly that Mr. Snyder developed and which was later put on the market.

(Plaintiff's Exhibit 15, a copy of Snyder patent 1,714,894, received in evidence.)

222 There is here in the room a machine which shows the construction as actually made by Maytag embodying the construction of the flange dolly and the suction cup dolly as shown in that patent. It is this machine (indicating), Plaintiff's Exhibit 7, and the vacuum cup type dolly is marked Plaintiff's Exhibit 7 B. The machine as it now stands, is an exact duplicate of the machine as actually put out by the Maytag company to the extent of some 2100. Then that was removed and the other flange dolly, Plaintiff's Exhibit 7 A put on. That is the same as those that were manufactured.

In those machines, the dolly was slidably mounted on the lid. That was in order to permit the dolly to drop down and penetrate this mass of clothes in the tub. The operation of those two types of dollies was much the same as the previous peg type dolly. They acted upon the clothes the same by twisting them around in the tub, with the exception of rotating them on the corrugations on the side. This machine had no corrugations on the side. That was detrimental to satisfactory washing.

(Plaintiff's Exhibit 7 C and 7 D, two cuts, marked for identification.)

Those two cuts are standard reproductions of the Maytag flange peg dolly and the Maytag vacuum cup dolly machines actually manufactured and sold. They are substantially like Exhibits 7, 7 A, and 7 B.

(Plaintiff's Exhibit Nos. 7 C and 7 D, two cuts, received in evidence.)

223 The peg dolly machines with the wooden tub and the wooden peg dolly cleaned clothes much better and in less time than the cylinder type which the Maytag company sold. In connection with the operation of these peg dolly machines so far as the operation on the mass of clothes is concerned, to get them clean, it was necessary during the course of the washing after the clothes had been in there for about fifteen minutes to lift the lid, raise the dolly, and separate the mass of clothes in the tub so that those clothes on the inside of the mass could be pulled out to the outside where they would get a rubbing under the action of the dolly twisting them back and forth through the water. Wash boards were practically universally used by housewives in connection with these machines because it was necessary to wash very dirty parts of garments, such as the edges of the cuffs, the wristbands, the collar bands, and places that were more than ordinarily soiled, with the boards.

While the Maytag Company was selling the peg dolly and cylinder types of machines, they came in competition with other peg dolly machines, with rub board types, and those were divided into two classes, one class where the rub board was stationary and the tub oscillated, back and forth, with the corrugations on the inside of the tub, and the other where the tub was stationary and the rub board oscillated
224 back and forth. We came in contact with vacuum cup machines and other cylinder types of machines. The complaints we received were universal throughout the industry; common knowledge.

All of these various types of machines were on the market in 1922 or early part of 1923. There were right around fifty companies manufacturing these types of machines at that time; I don't know the exact number. The peg dolly was the type that was most prevalent and those sold generally throughout the United States by these different companies. The oscillations of the peg dollies in those machines during that period of time previous to 1922 were right around thirty to thirty-five oscillations per minute.

The peg dolly type would wash faster than any other type. The rub board type and I would say the cylinder type of washer took practically the same time; and the oscillator type was also a very slow washer. The approximate time used was from twenty-five to thirty-five minutes, depending on the clothes, in the rub board type and the cylinder type. The dolly type took a little bit less time than that.

The Maytag Company business in 1921 was far from satisfactory in spite of the improvements that Mr. Snyder had made on the dolly type machines we were selling at that time. The difficulty we experienced in connection with the sale of these machines at that time was chiefly because of the trouble we were having in the field with tearing the clothes.

225 I knew Mr. Snyder while I was connected with the company. I became acquainted with him a short time after I came in there in January, 1916, and knew him very well from then on until his death in 1927. I was very closely in contact with him in view of my work and duties in the sales and advertising departments.

The Maytag Company had an experimental department during the entire time I was connected with the company. That was located over the machine shop in a brick building on the west part of the premises. The experimental department was on the second floor in the east end of the building. In addition to Howard Snyder, George Miller worked in the experimental department at that time. Howard Snyder had charge of it.

Q. To what extent if you know within your own personal knowledge did he carry on his experiments in connection with the development of these various improvements to the dolly and cylinder types of machines?

A. A great deal. The major part of his time was devoted to trying to work out improvements. He discussed with me from time to time during the entire time I was connected with the company the various changes and attempts he was making to improve the machines.

In connection with the placing on the market, or about the time the Maytag Company was placing upon the mar-
226 ket this machine of the flanged peg dolly type, Mr. Snyder discussed with me the problems incident to the use of that machine and attempts he had in mind to do away with that kind of construction.

Q. Will you explain that situation in connection with the time when it took place, and go quite fully into detail as to just what was done and said?

A. I returned to the Maytag Company, as I said before, and went back in the office on September 1st, 1919, in the sales and advertising departments. In view of the responsibility I had in those departments at that time and my interest in what the company was selling and its problems in the fields, I was also interested in what was to be sold and what was coming up and being developed for sale. I remember in

the latter part of December, 1919, a few days before Christmas Howard Snyder came to my office and asked me if I would come to his office, that he had something he wanted to show me. I went over to the Experimental department immediately with Mr. Snyder. We went in through his office and out into the shop, and he showed me a cast aluminum tub washer which was later known as Model 70. We went over the machine and he explained to me how the machine was built, how he cast the tub, and he showed me the flanged dolly. That was substantially the same type of machine as Plaintiff's Exhibit 7. I don't know of any changes from that flanged dolly we saw at that time. We discussed the mechanism and a number of changes, and I remember I complimented Mr. Snyder
227 at the time on accomplishing a very difficult feat of casting an aluminum tub of that size and shape, and particularly the thickness of the side walls of the tub.

He also called my attention to the fact that this should be a very marked improvement over the old peg dolly, particularly the corrugations in the side of the tub, and how much easier these smooth flat flanges would be on the clothes rather than the other round pegs. As we stood there looking at the machine he said, "Some of these days I am going to build a washer that will do away with all of this destructive effect on the clothes by putting a thing in the bottom of the tub with paddles or vanes on it and throwing the water through the clothes and washing the clothes while they are floating in the water," and as he said that he moved his hand back and forth like this, showing the action of this member in the bottom of the tub and how it would oscillate back and forth. The Model 70 machine was there in my presence at the time he said that, and after he said that he pointed to the bottom of the tub where he planned on putting this oscillating member that I referred to.

Q. Following that what if anything was done—what contact did you have with Mr. Snyder in connection with this flange peg dolly type and the suction cup type and this new disclosure that he made to you at that time?

A. Very close contact. My next contact with Mr. Snyder in this particular instance was in May of the following year, Snyder asked me again if I would go to his office. I
228 went over there with him; we went out in the experimental department and Mr. Miller, who was employed in the department at that time was working on a machine. We went over to that machine and it was a wood tub; it had a wood tub taken from one of our standard Model 31 wood tub washers with the power leg from the Model 70 washer

and the power unit attached to the side of that wood tub. The power leg is the one that holds the crank and the worm gear and from which the shaft goes up to operate the wringer. In the power leg is a crank which is attached to a rack bar and in this particular machine the rack bar went under the center of the machine, was attached to a small pinion of the shaft; the shaft went up through the bottom of the tub and on the inside of the tub was a disc, a sheet metal disc about 13 or 14 inches in diameter on which were three upstanding wooden plates or paddles about 2½ or 3 inches high, or maybe higher. The inside diameter of those standard wooden tubs was, I would judge, about 20 inches or 21 inches, something like that. They were larger at the bottom than they were at the top.

On that particular occasion Mr. Snyder says "do you remember what I was telling you about before Christmas last year". I said that I did and he said "Well, this is the thing I was telling you about", and in so doing he walked over to the tub and started the motor. There was no water in the tub. My comment was, well, I said "I thought you were going to put this in the cast aluminum tub as you talked
229 about last December" and his answer was, he says "well, the cast aluminum tub costs about $50.00", and he says "it is a whole lot cheaper to experiment with wood tubs first."

As he started the motor the disc in the bottom of the tub oscillated back and forth. I commented on the difference in the speed between the speed of the oscillation of this disc with the blades on it and the peg type dolly and he looked up at me and he said "well, that is an important part of the trick." After that he put water in the tub and again started the disc in the bottom of the tub and I saw the action of the water, the water being forced out at the bottom against the inside walls of the tub, it came up on the inside and rushed toward the center of the tub and down again in a continuing cycle. It was oscillated first one direction and then the other. He also put clothing in the tub, pieces of garments, and those went down in the center very rapidly and when they got in the neighborhood of the discs in the bottom of the tub they were thrown violently out to the outer part of the tub, coming up the outside, in toward the center and disappeared down in the center again.

Q. Who was there on that occasion aside from you and Mr. Snyder?

A. George Miller was working in the department at that time and he was working on the machine when we went into the department.

230 I asked Mr. Miller to make a replica of that machine, about three years ago. I did not give him any explanation or any details or suggestions as to how that should be made; he was instructed to make a replica of what he made in 1920. I have that replica here. It is this machine here.

(Machine referred to marked Plaintiff's Exhibit 8 for identification).

That disc impeller was driven through the bottom of the tub, through a packing gland or stuffing box and thence from an electric motor. The same type of motor we were using at that time, which was General Electric, was used on that machine.

After that machine was exhibited to me, it was sent to the home of a washer woman in Newton. It was put in daily use there. I saw that machine again in August in the experimental department, having been brought back for some repairs of some kind.

Q. What, if anything, was done by Mr. Snyder following that within your personal knowledge during the balance of the year 1920 and 1921 in connection with that machine and his other work in putting out the two types of dolly machines?

A. He continued his work of trying to improve under the direction of the Board of Directors, trying to improve the peg dolly type machine and out of his work and his experiments came the vacuum cup type dolly which was put into production in October, 1921. Early in the year at a Board of Directors meeting at which I was present—

231 Q. What year?

A. Early in the year 1921 Howard Snyder wanted to put the under-type of submerged agitator—

Mr. Bristol: I object to what Mr. Snyder wanted to do.

The Court: Sustained.

Q. What he said.

A. He said to Mr. Maytag in the Board of Directors meeting that he knew what would improve sales and business conditions within the Maytag Company.

Mr. Snyder was unable to put the gyrator type washer on the market and it was necessary for him to go ahead and

continue his attempts to improve the old dolly type. He did do that.

In October, 1921 he built a gyrator type washer with an agitator or gyrator in the bottom of the tub, using a cast aluminum tub taken from a Model 70 washer and had that washer on test at Mrs. Ellingsworth's home. That machine was built prior to October; I saw it in October and it was in duty then at Mrs. Ellingsworth's home. That machine is here in the room. Here it is.

(Machine referred to marked Plaintiff's Exhibit 8 A for identification).

Q. In October of what year was that actually made, that you saw? A. 1921.

232 Q. How did the tub of that machine compare with the tub of the Model 70 which had been previously made?

A. It was practically identical; in fact it had a Model 70 tub. In that machine the mechanism that was operated from the top of the dolly was dismantled and taken off. That machine since it was first used in my presence in October, 1921, has been in the possession of the Maytag Company except when it was tied up in court exhibits of some kind. We produced it for use in the Brooklyn Edison case.

It was in October, 1921 I went to Mrs. Ellingsworth's home with Mr. Snyder and I saw there the machine put through a complete washing. Mrs. Ellingsworth filled the tub with hot water and soap, Mr. Snyder operated it; I saw dirty clothes put in the machine, in the tub of the washer and I saw those clothes as he put them in piece by piece go down in the center of the water in the tub, thrown out at the bottom against the side walls, inside side walls of the tub, up on the outside, in toward the center and down again and we observed the washer all the time it was operating on each batch of clothes, because the lid was left up so we could see the operation. The clothes put in were the usual run of clothes that a washer woman has and at the end of seven or eight minutes those clothes were taken out clean. We saw three or four tubs full washed or washings washed in that way. Then later on the same month when Mr. Maytag returned to town I went

233 over there with Mr. Maytag, Mr. Snyder and Mr. Sparks who was the secretary of the company and saw another demonstration practically of the same kind. On that occasion, Mr. Maytag, Mr. Sparks, Mr. Snyder and myself were there. I don't remember Mr. Miller there.

Q. Do you recall what was said to you on that occasion by Mr. Snyder relative to this machine and getting it into production?

A. At that time Mr. Snyder wanted to put the machine into production—

Mr. Bristol: I object.

The Court: Is that what he said?

The Witness: That is what he said. In fact, he said "I would like to put this machine into production just as soon as possible" but it was necessary to leave the machine on test for a while longer, which was done. That machine was left on test until the latter part of December and about the 20th of December instructions were given to put the machine into production, start the drawings, make the drawings and start the machine into production. The directors of the Maytag Company first gave their consent to the putting of this type of machine on the market in the latter part of December, 1921.

Following that work was started on the drawings, the tools, patterns and on the 21st of December work was started on four complete models and the first of those four models—or the first four turned out were completed in February, 1922. The models were the same thing. At that time that was known as Model 80; four Model 80's were put
234 into production. The first one of those machines Mr. Maytag took to the Pacific Coast with him, another one was shipped to Mr. Bones in Milwaukee and another one was sent to Mr. Scott at the Philadelphia branch.

The first one was shipped to Mr. Bones about the middle of March.

The first substantial sale of these new machines was in April, 1922. The number of sales during the first year was, I believe, about 25,000. Since that time, approximately three million machines have been sold by the Maytag Company of this same general character. The distribution of those machines has been national; universal distribution in the United States.

Q. What, if any, experience was had by the Maytag Company during the early years in connection with the sale of these machines?

A. Due to the fact that the washer was of a novel construction and operated by an entirely new principle, it was necessary to show and to demonstrate and sell the washer by doing the actual washing and making an actual demonstration. And the sales organization demonstrated the ma-

chines to the dealer in order to sell them; and the dealer and his sales organization in turn demonstrated them to the housewife in order to show the very great differences between this type of machine and the principle upon which it operated and any other machine then on the market.

Q. Did you experience any difficulty from your competitors in this connection? A. A great deal of difficulty.

Q. What was that?

A. From the belittling of the machine and the disparaging of the principle, the response we had in selling the machine after customers had been discouraged by competitors from buying it, on account of the damage they claimed it would do to the clothes.

Q. And during that time did you have charge of the advertising and sales? A. I did.

235 Q. What complaints, if any, did you get on account of these competitive tactics from your organization?

A. We received complaints from the sales organization on the things I mentioned a while ago, of the resistance they found in the field from competitors and from the actual users.

Q. What were some of the specific complaints?

A. The machine would tear the clothes; that it was very drastic and very destructive to clothes; that it was an ensilage cutter; that it was a fad and would soon pass out.

Q. What was the fact in regard to the operation of this machine as to whether it was a freak and whether it was an ensilage cutter in actual practice of the machine?

A. The machine would wash clothes very cleanly and very rapidly, and if properly operated would not tear the clothes or wear them. It was entirely new. The difficulty we had was making a safe comparison, an apt comparison between this principle of washing and the other principles that the housewife and the dealers all knew very well.

Q. What was that old principle?

A. The dolly type, the cylinder type, the oscillator and the vacuum cup type, and the rub board type.

In connection with the sale of these machines in 1922 I prepared advertising material for distribution to tell how the machine worked. This circular marked Plaintiff's
236 Exhibit 11B is a circular put out in 1922 by the Maytag Company, the text of which I wrote myself. I based the statements contained in that circular concerning the operation of that machine on a great many tests I made myself, and other tests that were made that I witnessed. The statements there made are accurate representations concerning what I then saw.

This advertisement identified as Plaintiff's Exhibit 11 C, is a four-page insert that was run by the Maytag Company in May, 1922, issue of Electrical Merchandising, advertising and announcing the new Maytag Gyrafoam washer to the dealer organization. Electrical Merchandising is a trade paper. It goes to electrical appliance and hardware dealers throughout the United States, but not to the general public.

I had occasion to prepare directions for operating the Maytag machines like Plaintiff's Exhibit 9 and following. Plaintiff's Exhibit 11 E is a direction folder for operating the Maytag Gyrofoam washer. This was written by me in 1922. A copy of this was put in each gyrator type washer sold by the Maytag company since the first one was put out.

The document which has been marked for identification as Plaintiff's Exhibit 11 F was prepared by me in collaboration with the advertising agency and is an advertisement of the Maytag Gyrofoam washer. That is the one that is commonly spoken of as the gyrator or gyrotator machine.

237 Mr. Lane: I offer in evidence Plaintiff's Exhibit 11 F.

Mr. Bristol: Previous objections to this sort of thing have been made so far as they are offered as proof of the truth of any statement contained in them.

The Court: The exhibit will be received with the same limitation as heretofore made and placed on it.

(Plaintiff's Exhibit 11 F, an advertisement, received in evidence.)

The circular, Plaintiff's Exhibit No. 11 D, is a circular showing the Model A Maytag gyrator type washer, Model 15 Gyrator type washer, and the Model 25 gyrator type washer, all these models put out by the Maytag Company. The circulars contain actual fact statements as I have found them from the operation of these machines. The names under which this machine was sold as first put out and since were first, the Gyrofoam Washer, then as the Gyratator type washer, and later the Gyrator type. It is known throughout the industry at the present time as the gyrator type of washer. Previous to 1922 there was no such type recognized in the washing machine industry in this country.

The Maytag Company enjoyed an exclusive field in the sale of these gyrator or Gyrofoam machines until the early part of 1925. During all of that period from 1922 to 1925 that machine was in competition with each of the various

types of machines that I have referred to. Following
238 1924, other competitor companies began to put the gyrator type machines on the market and their sales continuously increased of this gyrator type machine and the sales of the wood tub dolly or the peg dolly and the vacuum cup, oscillator and the cylinder types of washer continuously decreased.

The rub board type of machine was a very definite factor in the washing machine industry prior to 1922. I don't know of anyone making the rub board type of machines at the present time.

In 1916 when I came with the Maytag Company they were buying motors from the General Electric Company, and they continued to buy [from them] from that company, up until the latter part or the end of 1930. Considerably more than 90% of the motors they used on all of those machines, both the old and the new types, were purchased from the General Electric Company. In connection with that work representatives of the General Electric Company had occasion to visit the place of business of the Maytag Company in Newton, Iowa. I would say that the regular representative visited on an average of once a month, during the entire period and some of the engineers an average of three or four times a year. He had free access to the plant, including the experimental department, usually in the presence of Mr. Snyder, for the purpose of determining the electric motor requirements of the different types of washers.

239 They put motors on these various machines that were in the experimental department, to test them out from time to time and as a result of those tests the Maytag Company purchased from the General Electric Company close to two million motors. I do not know whether the General Electric Company had any of our machines at their place of business during any of that period of time. I know that they were kept thoroughly informed as to just what we were doing all the time through their representative. We have bought from the General Electric Company for use on those various machines, one-sixth horsepower and quarter horsepower motors. Mr. Snyder and I had occasion to discuss with them the operation of the machines and the problems we had in connection with the operation of the various machines on which motors were to be used, in a general way.

So far as I know, the General Electric Company first put out a machine of the general type shown in Plaintiff's

Exhibit 12 in February, 1935. That is the first time I knew of them putting out a machine of their own manufacture. They had sold some of that type previously. I don't know whether the General Electric Supply Company also sold those machines. They sold the later ones.

I have seen some of the advertising put out by the General Electric Company in connection with the sale of these machines like Plaintiff's Exhibit No. 12 and others. I have
240 seen this one which I cut from "Better Homes and Gardens" magazine of October, 1934, which I had in my files. When the magazine first came out, I cut it out and put it in my files. This shows a square tub and Plaintiff's Exhibit 12 shows a round tub. I haven't read the description contained there, that is, not lately. I read it at the time it came out.

The next is a circular that I received with a stock-holder's statement from the General Electric Company, and which I have had in my files since.

Q. What does that show as far as the structure of the mechanism is concerned?

Mr. Bristol: I object to that question as immaterial.

The Court: Overruled; exception allowed.

Mr. Bristol: The question of what the circulars show so far as the structure is concerned does not tie it in with anything.

A. The gyrator in the circular is approximately the same as the gyrator in Exhibit 12. The machine shown in the circular shows the square tub with a centrifugal dryer. Exhibit 12 is a round tub with a wringer attached. A centrifugal dryer is used for extracting the water from the clothes, instead of the wringer.

The next one is a direction sheet of the General Electric washer which I took from a General Electric washer on a General Electric dealer's floor in Des Moines about two years ago. The next one is a two page spread taken from
241 Electrical Merchandising of January, 1935 and which I have had in my files. It is an announcement of the General Electric Company the General Electric washers will be designed, styled, engineered and manufactured and serviced at the Bridgeport, Connecticut, works of the General Electric Company. The date of that announcement is January, 1935. These others are General Electric circulars but to my knowledge I have never seen them before.

Mr. Lane: I will offer the page advertisement taken from the Better Homes & Gardens publication, page 47 of October, 1934; the advertisement of the New G. E. Double Tub Washer which has already been marked in this case as Deposition Exhibit Plaintiff's Cross 6-3; the direction card which has been identified by the witness, the announcement of February, 1935, as Plaintiff's Exhibit 16, 16 A, 16 B, 16 C and 16 D.

Mr. Bristol: I object to these as incompetent and not shown to have any binding effect on the defendant before this Court.

Mr. Lane: I am not putting them in for that.

The Court: Overruled.

Mr. Bristol: I would like to add to that objection one or two matters which appear on the documents themselves. This advertisement from Better Homes & Gardens obviously shows a tub, the outward appearance of which has no resemblance to the Exhibit 12, Defendant's machine in
242 this case. The paper describing the G. E. Double Tub Washer is obviously an entirely different model from anything which is here in evidence or which has, so far as I am aware, been charged to have infringed.

Mr. Lane: It is not different in operation and construction, as far as operation is concerned.

Mr. Bristol: I am addressing myself to the paper and the statements shown on the paper. The same remarks apply to the direction card. That, also, is the double tub washer having an extractor tub at one side and not having any wringer such as Exhibit 12 has and I do not think that these exhibits, which on their face do not appear to correspond with the machine on which the plaintiff bases its charge of infringement, should be received.

Mr. Lane: We base our charge of infringement not only on the original machine but that as a sample of all these others, that is just representative of what all these others show.

Mr. Bristol: The February, 1935 advertisement, that does not purport to be a statement of fact and purports to be an expectation. "Beginning February the General Electric" and so forth "will be designed". It does not appear to be a present statement.

Mr. Lane: Is this an objection?

Mr. Bristol: Part of the objection, yes; and it does not show the double tub washers such as are shown on
243 two of the other documents that are offered.

The Court: The objections as amplified are overruled and exception allowed.

Mr. Lane: I might add for the purpose of the record that the Better Homes & Gardens advertisement, the direction sheet, the General Electric Double Tub device circular have been included in the stipulation as having been used by the General Electric Company in connection with the sale of machines.

Mr. Bristol: I object to that statement and move to strike it physically from the record. The stipulation is that these papers were published by the General Electric Company. Now, that is not an admission by the General Electric Company. That is the stipulation by counsel for the General Electric Supply Corporation.

Mr. Lane: Will you just read what I said; I want to be sure I am right about this because the stipulation ought to show fairly what it is and I want just that and nothing more.

(Last statement by Mr. Lane read by the reporter).

Mr. Lane: That is exactly what the stipulation says.

Mr. Bristol: I have to withdraw the statement which I previously made. What I thought I heard Mr. Lane
244 say to have been included in the stipulation was an admission of the General Electric Company.

Mr. Lane: I made no such statement.

Mr. Bristol: I am sorry. I certainly thought I understood you.

(Circulars above referred to marked Plaintiff's Exhibits 16, 16 A, 16 B, 16 C and 16 D for identification and received in evidence.)

Mr. Lane: I am also going to offer under that stipulation circular which is marked "Turn demonstrations into dollars," the original copy of it and also circular marked "Activator" as Plaintiff's Exhibit 16 E and 16 F.

Mr. Bristol: These are objected to as not binding in any way on the defendant.

The Court: Overruled, exception allowed.

(Circulars referred to marked Plaintiff's Exhibits 16 E and 16 F for identification and received in evidence.)

The Witness: I know what has been done by our competitors in connection with the sale of this gyratator type machine since 1925. I have seen various of these competitor's machines including the General Electric, and have seen machines actually operating of this type. The machine, the operations of which I have witnessed, compare substantially with the Maytag.

I was present at the trial of the Brooklyn Edison case in Brooklyn. I saw the Maytag machines of the gyrator
245 type actually used in demonstrations before the court there. I was present at the argument in the Court of Appeals in that case.

Q. What happened there with respect to the demonstrations or lack of them if you can state?

Mr. Bristol: I object to this as immaterial to any issue.

The Court: Well, I think it is immaterial, objection sustained.

Mr. Lane: I withdraw the question and ask to strike it physically.

I should like to offer in evidence Plaintiff's Exhibits 8 and 8 A.

Mr. Bristol: I object to the offer of Plaintiff's Exhibit 8 on the ground that this particular exhibit is not sufficiently proved.

The Court: Overruled, exception allowed.

(Plaintiff's Exhibits 8 and 8 A received in evidence.)

The Witness: I have seen the General Electric machines in operation, of the various kinds shown in the circulars and in this Plaintiff's Exhibit 12.

Q. How does that machine compare in construction and operation with the Maytag Gyrofoam machines that you testified about, in the actual washing of clothes?

A. Substantially the same.

246 Cross-Examination.

[BR] Mr. Bristol:

Q. I believe you said you had some records of sales, Mr. Bradt, is that right? A. I did.

Q. Have you broken those records down so as to show the number of machines that were made that were sold, exactly like Plaintiff's Exhibit 9?

A. I am not sure which Exhibit 9 is.

Q. Will you step down and see?

A. All the machines we sold from February and April, 1922 until October, 1924 were of that type.

Q. Without change?

A. Without change as to type.

Q. No, I did not ask you that Mr. Bradt. Please answer the question whether they were exactly like that?

A. I am sorry I misunderstood you. The sales from April until the beginning of the following August were exactly like that; from April, 1922 to August, 1922. That August the contour of the tub was changed at the bottom to constitute a recess or a depression in the bottom of the tub for the gyratator. I don't know how many machines had been sold before that change was made. I haven't broken those figures down.

Q. Why was it necessary to make that change?

247 A. It makes a neater looking appearance.

Q. That is not the only reason, is it, for making that change?

A. It created a sediment zone or a better sediment zone underneath the gyrator.

Q. Why was it necessary to make that change?

A. It prevented buttons from getting under the edge of the gyratator.

We had a few complaints about those troubles in the field. We got those fast enough so as to make it necessary for us to change between April and August of 1922.

As I remember the machine was sold from August, 1922 without any further changes than that recess in the bottom of the tub until October, 1924. We do not have a specimen of that particular machine as it was sold between August, 1922 and October, 1924 in this court room. I don't know how many of them were sold with the recess in the bottom of the tub but no further change. We had some complaints about the machines from the field between August, 1922 and October, 1924, of leaking through the packing gland at the bottom of the tub.

The change made in the machines as marketed beginning October, 1924, was a high center post bearing was put in the center of the tub and in the gyrator. I do not think

248 anything was done to the shape of the blades of the agitator at that same time. That particular style con-

tinued without any further change at all until we brought out a new model in 1927 with a different wringer and a different power unit. If there were any other changes made between October, 1924 and 1927, they were detail changes and I don't remember. In 1927 we had a new model wringer. I don't see any specimen of that here in the court room.

I don't know how many were made with that first high center post; I have not got the figures broken down on that.

The next change that we made was that we came out with another model in 1930. It was a difference in the power unit, in the wringer column outside of the tub; as I recall that is all. I do not know how many we sold before we made that change; I haven't the figures segregated. That 1930 new model lasted, without change, until the latter part of 1932. Then we made a slight change in the shape of the gyrator.

Up to that time we had been using a dish shaped gyrator and the change was made to a gyrator with the dish part taken out, sloping from the edge of the gyrator toward the center. I think we have got a specimen here in the court room of that model with that changed gyrator.

Mr. Bristol: The witness has removed an agitator from one of the Maytag machines here in the court room.

249 Q. Will you also remove the agitator from the Plaintiff's Exhibit 9 machine? A. Yes, sir.

Q. Would you say there was no more than a slight change between those two agitators?

A. As far as the operation is concerned I would say it is a slight change.

Q. Complaints from the field compelled you to go eventually to the agitator that had the outward, downward sloping base and vanes, didn't it?

A. No, sir; I wouldn't say so. Greater ease in production problems took us away from the dished agitator. To my knowledge, that is all. I do not have any knowledge, about sufficient complaints to justify the change. We did not have any complaints about tearing of the clothes with the old agitator from Plaintiff's Exhibit 9.

Q. You had some complaints that caused you to recess the bottom of the tub, didn't you? A. Yes.

Q. And that was the machine like Plaintiff's Exhibit 9 with the low post, high vane agitator, was it not?

A. I am not sure what you mean by "high vane".

Q. I mean the agitator such as you have just removed from Plaintiff's Exhibit 9 with vanes which are higher at the

outer edge than they are toward the inner part of the agitator?

A. As I stated before, we have had a few complaints.

Q. Didn't those complaints include some reference to tearing of clothes?

A. Do you mean regarding the recessing of the tub?

250 Q. The complaints which preceded the recessing of the tub?

A. Yes, I think there were some complaints there with regard to tearing clothes due to the buttons being caught.

A. Since you got over to the high post agitator with the vanes which sloped down toward the periphery, have you had complaints about the vanes tearing the clothes? A. No.

Q. And yet you call that a slight change?

A. That is right.

I couldn't give you the figures as to the total amount of money the Maytag Company has spent in advertising the machines which it has sold. I am an officer of the company, I am vice-president. I have held that position since 1928.

Q. You referred in your testimony to a meeting of the directors I believe in December, 1921, of the Maytag Company. Have you produced the minutes of that meeting?

A. No, sir.

Q. Is there any reference in them to the production of the Model 80 machine? A. I haven't examined the records.

Q. You have refreshed your recollection a good deal as to dates in preparation for this testimony, have you not?

A. Some, yes.

Q. And you did not examine the minutes of the directors meeting about which you have testified?

A. No, sir.

251 Q. If there had been anything in those minutes you would have brought them here, wouldn't you? I mean anything pertinent to the production of Model 80?

A. I don't know; I might have; depending on what it was on.

Q. That is, you would have brought it here if it was favorable to you and left it at Newton if it was unfavorable?

A. That is altogether possible.

I also referred to a meeting of the board of directors early in 1921. Mr. Snyder, Mr. F. L. Maytag, Mr. L. B. Maytag, and Mr. Sparks were present at that meeting. I was there, but I wasn't an officer at that time, nor a director.

Q. When you say you were there do you mean you were at that directors meeting? A. That is correct.

The directors of the Company at the end of 1921 were F. L. Maytag, E. H. Maytag, L. B. Maytag, Mr. Sparks, Mr. Snyder, and W. L. Pickens. I was present at that December, 1921 meeting. Mr. Snyder, Mr. F. L. Maytag, Mr. L. B. Maytag, and Mr. Sparks were also there. The secretary of the company at the present time is Mr. Sparks.

Q. Did you consult any records in refreshing your recollection about seeing this machine, Plaintiff's Exhibit 8-A, at Mrs. Ellingsworth's in October, 1921? Will you look at the tag, please, and let us see what the number really is?

252 A. It is Plaintiff's Exhibit 8-A.

Q. That is that square tub machine, is it not?

A. Yes, sir; yes, I did.

Q. Have you produced those records?

A. I have them here; yes, sir; one of them. It is an office communication which I found in Mr. F. L. Maytag's personal file, dated October 16, 1921.

(Defendant's Exhibit No. 12, a copy of the communication referred to, was marked for identification, offered in evidence, and received in evidence.)

This paper was produced at the trial of the Brooklyn-Edison case. It was in evidence there.

I understand General Electric motors used by the Maytag Company ran at 1750 r. p. m.

The very first occasion on which I saw this machine, Plaintiff's Exhibit 8-A was at Mrs. Ellingsworth's house, about the 20th of October, 1921. We have looked for records, bearing on the date of that machine. We have been unable to find any, other than this letter of inter-office communication, a copy of which has been marked Defendant's Exhibit 12.

Q. I notice on the agitator casting on this machine what seems to be a pattern number "Y-1447". Did the Maytag Company keep any record of those pattern numbers?

A. They do.

Q. And that has been done regularly, has it, from the beginning? A. That is correct.

Q. Did you find the record of that particular pattern number? A. On this particular gyrator?

253 Q. No, I am asking you if you found the record of that particular pattern number. A. I think so.

Q. What did it show?

A. I would have to get the record.

Q. You haven't produced it here, have you?

A. No.

Q. Who knows about those records? A. I do.

Q. Who keeps them?
A. The company's experimental department, back in Newton.
Q. That record of that pattern number would be a record of a very important part of that machine, would it not?
A. At least of that gyratator.
Q. I understood you to say that this machine, Plaintiff's Exhibit 8-A, is the one which you saw at Mrs. Ellingsworth's on October, what date? A. On or about the 20th.
Q. Of 1921? A. That is right.
Q. That is your testimony, isn't it?
A. That is right, as far as I know; yes, sir.
Q. Have you seen the record of the pattern number that is on that gyrator? A. Yes.
Q. How recently? A. Two or three days ago.
Q. What does it show?
A. I believe it shows that casting was made in December, 1921. I would have to consult the record first.

Mr. Bristol: That is all.

254 Redirect Examination.

By Mr. Lane:
The Witness: Mr. F. L. Maytag is not living. He passed away around the 26th of March, 1937. Mr. L. B. Maytag is not still with the Maytag Company; he neither is an officer or a director.

I would say approximately two and a quarter million of the machines of the dished type of impeller were manufactured and sold by the Maytag Company. I would say off hand about a half million were sold prior to the time they put the high center post in that dished impeller.

Q. That is very close to the figures or approximating that?
A. I think so.
Q. How do you account for the date which you have just fixed with relation to that pattern and the mechanism that is in the machine that you saw on October 20, 1921?
A. The only way I can account for it is that the gyratator that was in it at the time I saw it in Mrs. Ellingsworth's was later exchanged for this one made in December.
Q. But how did the machine that you actually saw in October, at the time subsequent to the communication you have produced, compare with the structure that is actually in the court room here? A. Substantially the same.
Q. What do you mean by substantially the same? How did it differ, if at all, so far as the impeller is concerned?

A. It did not differ at all.

255 Q. Have you had any conversations with Mr. Snyder previous to your going out and seeing him relative to its construction and the use of this impeller in the Model 70 machine? A. At Mrs. Ellingsworth's house?

Q. Yes.

A. Well, nothing other than the general conversation that he was keeping me posted on what was being done in the experimental department on producing a machine of this kind.

Q. What, if anything, did he say to you prior to October relative to the making of this machine and what was used in connection with it?

A. I remember sometime before October he said "I am going to have a machine some of these days that you can see wash with the cast aluminum tub." I think it was some time in August. I don't have any definite recollection.

(Witness Excused).

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256 WILLIAM H. KENERSON, of lawful age, being produced, sworn and examined as a witness on behalf of the Plaintiff, testified as follows:

Direct Examination.

By Mr. Lane:

Q. Will you please state your name?

A. William H. Kenerson.

Q. Your occupation?

A. Consulting engineer, professor of mechanical engineering and chairman of the Division of Engineering at Brown University.

Q. How old are you, Professor Kenerson?

A. Sixty-three.

Q. What experience have you had in mechanical matters and especially relating to washing machines of the general type and kind that you have seen here in the court room?

A. For some forty years we have run an experimental testing laboratory at the University where we are called upon from time to time to investigate various problems connected with industrial developments and some few years ago at the request of your firm I made a study of washing machines and washing machine methods.

Q. To what extent did you do actual washing of clothes?

A. To considerable extent, probably over two hundred washings.

Q. And what machines did you use in that kind of work?

257 A. Well, practically all the machines that I could get my hands on; probably an order of fifteen or twenty different makes and types of machines.

Q. Can you tell what generally were the types that you tested and operated and what those machines were?

A. Yes. I operated the peg dolly type, rub board type, oscillator type, vacuum cup type and various of the gyrator type machines then on the market including that of the Maytag Company.

Q. Are you familiar with the reading of patent specifications and drawings? I am not asking you anything about claims? A. Yes, sir.

Q. Have you examined the Snyder patent number 1,866,779, issued July 12, 1932, in suit? A. Yes, sir.

Q. And are you familiar with the construction and operation of that device? A. I am.

Q. Have you seen and operated the machine that follows the construction of that patent? A. Yes, sir.

Q. In the actual washing of clothes? A. Yes, sir.

Q. Have you seen the General Electric machine which is in evidence as Plaintiff's Exhibit 12? A. I have.

Q. Have you operated that machine in washing clothes?

258 A. Yes, sir.

Q. Now, I wish you would just state briefly a comparison between the construction and operation of the machines shown in the drawings and specifications of the Snyder patent and the General Electric's machines, and I don't care to have you go into too great detail of the reading of the patent because it is perfectly plain to the court but simply point out the constructions of the two machines, their similarities or dissimilarities and the operation of them as you have observed them in actual work?

A. Both consist of tubs with smooth interiors.

The Court: Pardon me, part of that question escaped me. The comparison is between the plaintiff's machine and the defendant's—

Mr. Lane: The plaintiff's patented machine—

Mr. Bristol: I understood the question to be the machine of the patent.

(Last question read by the reporter).

The Court: That is all right, I just missed two or three words.

Mr. Lane: In that connection of course when I speak of the General Electric machine I mean like Plaintiff's Exhibit 12.

259 A. Then I understand I am to compare the machine which is represented, in actual practice, by the drawings of the Maytag patent and the machine of the General Electric Company as represented in the exhibit?

Q. That's it?

Mr. Bristol: I do not want to start in and object but I think the witness is understanding the question differently from what I understand it in view of what he has just said. If he is going to answer the question on the basis of a comparison between the Maytag commercial machine and the defendant's machine it is irrelevant to this case. The question is proper if it is limited to a comparison of the machine described in the Snyder patent with the defendant's machine.

The Court: Well, the witness understands.

Mr. Lane: I will withdraw it your Honor, I will save time by doing so.

The Court: Very well.

Q. Have you compared the drawings and specifications of the Snyder patent with the Maytag machines in evidence as Plaintiff's Exhibits 9, 10 and 11?

A. Yes.

Q. Will you state just briefly how those compare in construction and operation with the Snyder patent?

A. Exhibit 9 is a fair representation of the patent
260 drawings the patent drawing appears to be made from that machine. And now I am to compare that machine—

The Court: Not yet.

Q. How about the other two machines, so far as general construction and operation is concerned, Exhibits 10 and 11, with the Snyder patent?

A. 10 is similar but with a high center post and 11 is the round tub with an impeller with a high center post.

Q. How do the constructions compare so far as the spacing of the impeller is concerned, the position of the impeller, the size and shape of the blades and things of that kind so far as operations are concerned?

A. They are substantially the same and operate in a similar manner.

Q. Now then I wish you would compare the structure shown in the Snyder patent drawings and make references to

the specifications so far as it is necessary to do so, with the General Electric machine which is in evidence as Plaintiff's Exhibit 12, and using in connection therewith, any information that you have gained from the operation of that machine or the machines of the Maytag Manufacture, Plaintiff's Exhibits 9, 10 and 11?

A. Both consist of tubs with smooth interiors but the Maytag machine is of somewhat different shape. It has
261 been described here as being square but that is an incorrect statement, I think. It is somewhat square but with round corners but so far as the washing is concerned would have and does have from the result of my experience about the same effect as a round tub, possibly rather better in some respects but they are both smooth tubs. The impeller in the General Electric machine has substantially the same relative diameter to the interior of the tub that the Maytag impeller has to the interior of its tub.

Q. You are speaking of the patent drawing?

A. I am now referring to dimensions as indicated by the patent drawings and the actual dimensions of the General Electric tub. The effective area of the impellers in the two cases are substantially the same although their shapes differ considerably. By effective area I refer to the portion of the blades that induce motions in the water. The purpose of both is not merely to produce turbulence; they are not merely agitators but they both produce direction flow setting up rather violent currents in a direction from the center outward, upward and then in at the top and down the center again and at the same time—this is important—both holding the direction of the water around the circumference of the tub as well as radially outward and over outside around the circumference of the tub, which is the result of the shape of the impeller and the speed at which it is run. They
262 run at slightly varying speeds. The General Electric Company impeller runs a little faster than the machine as operated in accordance with the patent but there is nothing in the patent disclosure itself which specifies any definite speed. It does state however that it must be operated in such a way as to produce vigorous currents and that implies a rather rapid motion as would be clearly understood by any person who is familiar with hydraulic principles. The direction of flow, therefore, of the water in the two are substantially the same and the result on the contents of the tub of material to be washed is substantially the same, as I have observed in operating the machines and would be expected from a comparison of the drawing and the actual machine of the General Electric Company.

Q. What is there in the specifications which leads you, as an engineer, to say that the speeds are clearly indicated in the operation of these machines?

A. Well, it states both in the disclosures and in the claims—

Q. Limit yourself to disclosure?

A. It states in the disclosure that the machine should be operated to produce violent—an energetic I think the phrase is—I am quoting from the bottom of page 1, line 47 "So that

263 the rapid and energetic alternating rotary movements of the gyrator do not interfere with the goods or cause them any injury or damage, while at the same time the goods and the wash water, or the rinse water, when rinsing, are turbulently swirled or whirled about with a surging and seething movement within the tub."

It is obvious that speed must be very considerable, more rapid than that which was used with the peg top dolly, for instance or rub boards in general, in order to produce that type of circulation.

The Court: If you will note, Professor, that point in your testimony and take it up at that point upon the reconvening of court. Court will stand at recess until 1:30 P. M.)

(Thereupon, Court stood at recess until 1:30 P. M.)

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264 Afternoon Session.

Tuesday, November 30, 1937. 1:30 P. M.

WILLIAM F. KENERSON, resumed the stand.

A. (Continuing) To continue with the comparison, there is one slight difference in the structure of the General Electric Company machine as contrasted with the disclosure of the patent and that is in the number of vanes or blades on the impeller. There are four shown in the Snyder patent and but three in the General Electric machines. This does not, however, substantially affect the operation or result in the working of the machines. In both cases the impellers are not perforated on the bottom; in other words, they have a solid base with the vanes projecting upwardly from it and both having substantial height at the outside end of the vanes, where that height is most effective. The description in the Snyder patent, and I am now quoting from page 5 beginning at the first line where it describes the performance

of the machine "When the gyrator is alternately rotated or oscillated, with materials to be cleansed and the cleansing liquid in the tub, the liquid is given a radially outward and upward movement toward the upper part of the tub, [than] an inward movement, then a downward movement toward the cone 53 of the gyrator, the liquid also progressing, in
265 its whirling action, about the tub first in one direction and then in an opposite direction so that the resultant motions are substantially gyratory ones, as helical movements about a ring having a circular cross-section. In this way the washing and washable materials are given a turbulent swirling action. As a result of this action imparted to the cleansing liquid by the gyrator, the water in turn imparts a similar action to the fabrics. Goods are thus whipped, whirled and dashed around in the sieving whirling, turbulent action set up by the gyrator." And then this is important "Thus the fabrics are given a quick snappy, sieving, whirling, reversing double action, produced by gyrator, doubling the clothes first one way and then the other until every thread in the fabric is acted upon an untold number of times somewhat like the cracking of a whip-lash in all directions." This effect is seen to take place as would be expected from the structure in the case of the General Electric machine. Also the Snyder description points out the fact that these clothes are kept in virtual suspension in the water and out of substantial rubbing contact with the moving impeller or with the sides of the tub and that again is evident in the operation of the General Electric machine, so that to really sum up the thing, the structure is substantially the same in the General Elec-
266 tric machine as is disclosed in Snyder and that the performance is the same in that it actually does in practice what the Snyder patent described as the object of his invention. They do employ the same methods and get the same result.

Q. What have you to say from a reading of the Snyder patent as to the speed of operation of it and what that patent teaches an engineer in connection with the operation and the speed of the operation of the machine?

A. It is perfectly obvious that to get these currents in the water of such a character that they will sustain the goods in virtual suspension above the impeller and out of rubbing contact with it, they must be vigorous and that in order to be vigorous the speed must be considerable. The amount of energy that is imparted to water by a moving vane in it is proportionately the square of the velocity of that moving vane, to give an instance, and it is perfectly obvious from

that the outside edges are more effective than the inside edges and anybody skilled in the art would know that to produce the vigorous currents desired you would have to run at a considerable speed, that is at a speed higher than was customary in the old form of peg dolly and rub board and that sort of thing.

Have you operated Plaintiff's Exhibits 9, 10 and 11 which I am now pointing to, in the actual washing of clothes?

There is some slight difference in either the shape and
267 construction of the impeller?

A. I either operated those particular ones or some just like them.

Q. Will you state what if any difference there is in the operation, spacing and construction of the mechanism as shown, as far as the operation is concerned?

A. They are substantially the same both in method and result of operation.

Q. Is that true in the actual washing operations that you carried on?

A. That is what I was basing my opinion on, yes, sir.

Q. I call your attention to a drawing and ask you to compare that with the General Electric structure in evidence as Plaintiff's Exhibit 12 and state the result of that comparison?

A. This seems to be a fair pictorial representation of this defendant's machine.

Mr. Lane: I offer that in evidence as Plaintiff's Exhibit 12 A.

(Picture marked Plaintiff's Exhibit 12 A for identification and received in evidence.)

Q. I call your attention to another illustration which is marked Plaintiff's Exhibit 12 B which shows a square tub mechanism. What have you to say as to the operation of a device of that character in comparison with that shown
268 in Plaintiff's Exhibit 12 A?

(Picture marked Plaintiff's Exhibit 12 B for identification.)

A. Of course, from the diagram I would not know that was a square tub. That is not evident because it is a cross section. The only difference that I can see, the only observable difference is that one tub appears to be a little deeper than the other but otherwise they are substantially the same.

Q. How about the operation of the two machines?

Mr. Bristol: Just a minute. This 12 B that you have talked about is not any representation of anything that has been shown to the Court yet, is it Mr. Lane?

Mr. Lane: It is shown in some of those circulars.

Q. How about the operation of those two machines?

Mr. Bristol: I object to that question as improper because no basis is laid for any discussion of the operation of this thing that 12 B purports to represent.

The Court: Overruled, exception allowed.

A. They appear to be capable of substantially identical operation and with the same result.

Q. I call your attention to a General Electric circular which has been marked in evidence as Plaintiff's Exhibit 16 A, showing a square tub and with a gyrator in the
269 bottom of it, and ask you how that compares in construction with the drawing which is in evidence as Plaintiff's Exhibit 12 B?

A. The diagramatic drawing, I would say, fairly represented a cross section of that machine, that is the portion of the machine where the washing is done; not the whole machine.

Mr. Bristol: If your Honor please, there is nothing in this record yet, as far as I am aware, that shows that this defendant has sold any of these double tub or square tub machines.

The Court: I do not think there is but I suppose that will be shown later.

Mr. Bristol: I reserve a motion to strike it out unless it is connected up.

Q. I call your attention to Plaintiff's Exhibit 16 A and ask you to read the material that you find on the right hand column there and ask you whether that correctly discloses what you found from the actual operation of the General Electric machine, Plaintiff's Exhibit 12 A?

Mr. Bristol: Same objection.

The Court: Overruled, exception allowed.

Q. You may read it aloud, if you care to do so.

A. (Reading) "No more frayed cuffs or collars—no more torn sheets—no more fears for silken lingerie—for in
270 this washer your clothing gets a thorough scrubbing on a washboard of clean soap suds. Here, at last, is a

washer that does all the work. Washing, rinsing, wringing—and so easily and quickly that you can well imagine you have a complete laundry at your command. At a touch of the switch the famous G-E Activator starts a steady swish-swish of the clothes guiding them up and down, through all the washing zones, forcing water quickly and surely through each individual piece, always gently—never harshly. How effortless it is to transfer the clean clothes from one tub to the other—just lifting them over a slight partition for the damp drying at the touch of another conveniently located control. No need to worry about getting rid of the dirty water—a handy pump transfers water into the sink or drain. And too, there's a filler hose to help fill the washer with water. With the Exclusive Activator Principles. The Activator is found only in G-E Washers. Different from the ordinary agitators. it washes by water action alone—with no harsh scrubbing. That is why it is safe to wash even your daintiest pieces. Because of its unique design the currents set up by the Activator's motion cause the clothes to be flexed, and hot sudsy water to be forced through the mesh of the fabrics, thus assuring a perfectly and thoroughly done washing. The Activator eliminates tangling and braiding—the common
271 occurrence that causes clothes to wrap tightly around the ordinary agitator post and cause tearing and straining. Make the towel tug test and see how the Activator works."

In rather flowery language I think that describes the facts with the exception that I would not agree, myself, that this Activator was alone found in G-E washers. This particular form may be but the principle involved is certainly not.

Q. How does that compare with what you found in the actual operation of the Maytag machines like Plaintiff's Exhibits 9, 10 and 11? A. You mean as to results?

Q. Yes. A. I think it fairly describes the results.

Q. Now, I would call your attention to Plaintiff's Exhibit 16 E and ask you to read the section from that circular on the last page and state how the structure of Plaintiff's Exhibit 12 compares with what is there shown as a result of your actual operation of Plaintiff's Exhibit 12, Defendant's machine?

Mr. Bristol: Same objection.

The Court: Overruled, exception allowed.

A. (Reading) "When making the Activation Test have the prospect look down into the tub. Call to the prospect's

attention the circulation of the clothes through the
272 various zones—up from the bottom of the tub, then down the curves of the Activator to the full power washing zone—then up again—down again—up—down—repeated over and over. Also have the prospect watch the movement of the clothes looking through the side of the special glass tub. Call attention to the roll-over movement of the clothes through the water similar to that of a barrel rolling across a floor. This roll-over movement flushes water through the fabrics—loosening and removing embedded dirt." I think if those directions were followed out the prospect would see the results described because I have seen them with the exception that I have not looked through a glass sided tub in that particular machine.

Q. How does that compare with the operation of the Maytag machines, Plaintiff's Exhibits 9, 10, and 11?

A. I think the description would fairly apply to the action in the Maytag machine.

Q. Proceed with your reading and comparison.

A. (Reading) "This simple activation test clearly shows the six multiple actions of the Activator. 1. Effective washing action starts at water level. 2. Sturdy, downward tug sweeps out air bubbles and pulls clothes into full power washing zone at tips of Activator blades. 3. Flexing of clothes to loosen embedded dirt particles. 4. Forcing
273 of hot sudsy water through clothes by Activator blades. 5. The swirling water action washes clothes as individual pieces, no braiding. 6. Circular roll-over movement of clothes through soapy water with a continuous return to the full washing zone. No dead washing areas." I think that very well describes the action both in the General Electric and in the Maytag with which we are comparing it. Shall I continue?

Q. Yes.

A. "Remember that efficient washing should give all the clothes a gentle washing, soaking and flexing to loosen embedded dirt as well as a more vigorous washing action that forces hot sudsy water through the fabric to sweep away the loosened dirt. The Activator gets the dirt." The last sentence I do not like because I do not think the Activator gets the dirt but the washing action resulting from the movement of the Activator does. Otherwise I would agree with the statements all right.

Q. Now, in your operation of the Maytag machines and in the General Electric machine like Plaintiff's Exhibit 12 did you place the washing in the tub while the Activator or the impeller was in motion?

A. Yes, sir, always.

Q. And did you distribute the clothes uniformly throughout the tub? A. Yes, sir.

274 Q. And did you find that better results are obtained by washing smaller quantities of clothes for shorter periods of time than by crowding the machine with large loads? A. Always.

Q. Did you find that for proper washing action the clothes should be turning over freely in the water as called for by the directions of General Electric?

A. Yes; otherwise I do not think the washing would be as rapid or as complete.

Q. Now, I call your attention also to Plaintiff's Exhibit 16 F and ask you to read what is there stated in connection with the machine and whether that correctly states what you saw in the actual operation of the Maytag machines, Plaintiff's Exhibits 9, 10 and 11 and the defendant's machine Plaintiff's Exhibit 12?

Mr. Bristol: Same objection.

The Court: Overruled, exception.

A. This states, and I quote "The Activator washes clothes as individual pieces without tangling or braiding. One of the six multiple actions of the Activator gently flexes the clothes to loosen embedded dirt—another action forces hot sudsy water through the fabric to remove the loosened dirt. The Activator gets the dirt. The amazing performance of the Activator is demonstrated by the towel tug test—you
275 see the clothes washed as individual pieces—you actually feel the multiple principle work. Come in and see this amazing demonstration—hold the towel yourself." I think if a person did, they would see the results as described but I again would take exception for the reasons stated, that is the statement that the Activator itself gets the dirt.

Q. In the picture shown in Plaintiff's Exhibit Number 16 E will you look at those pictures and say whether they correctly show the flows of the clothes in the tub as you actually operated those machines both of the Maytag type and the Plaintiff's Exhibit 12?

Mr, Bristol: Same objection.

The Court: Overruled, exception allowed.

A. I think they do as far as a two dimension picture can but I do not think any picture can correctly or adequately

show the movement of the clothes in a tub. This is an indication rather than a correct representation.

Q. What I am driving at is as to whether it shows the general movement of the clothes with respect to the impeller?

A. Yes, it shows one of the movements; it does not show the circumferential movement, and cannot.

Mr. Lane: That is all the direct examination.

276 Cross-Examination.

By Mr. Bristol:

Q. In response to Mr. Lane's question you said that you observed in the defendant's machine better results with small loads than with larger loads, is that correct? A. Yes, sir.

Q. What loads did you observe on in the defendant's machine?

A. Towels, handkerchiefs, and things of that order.

Q. And what did you use as the amount of the load for a small load and the amount of the load for a larger load, or for a large load?

A. I do not know how to describe that exactly because you might have a very large number or relatively large number of small pieces—

Q. (Interrupting) I don't want to interrupt you, Professor, but I do not think your answer is responsive.

(Whereupon, the question was read by the reporter.)

A. I cannot tell you without some explanation.

Q. Very well, will you please go ahead and make such explanation as you regard as necessary to a proper answer to that question?

A. I think there is no definite answer to your question because the statements "a large load" and "a small load" depend on many factors, one of which is the size, shape, and weight of the material. For example, a very large load for the machine might be a single piece—

277 Q. (interrupting) What machine?

A. The defendant's machine. Is that the one I am discussing?

Q. I hope so. That was my question.

A. That is what I have been referring to in every case so far and will try to continue to do so. A very large load for the defendant's machine might be a single piece that was not very heavy; a very light load for that machine might be a large number of small pieces that in the aggregate would weigh more than the single piece to which I first referred; therefore, I cannot definitely answer your question as to

what would constitute a heavy or light load without knowing a lot of details.

Q. You answered Mr. Lane's question all right and said that you found better results in the defendant's machine with small loads than with large loads.

A. I can define what I would consider a light load.

Q. I just want to ask you what were the loads that you compared as the basis for that answer you made to Mr. Lane?

A. A light load would be one—

Q. (interrupting) Not "would be"; what was it?

A. A light load was one where the turnover was very free; a heavy load is one—was one—where the turnover was not free.

Q. And your criterion of better results was merely the rapidity of the turnover?

A. The rapidity of the turnover and the rapid motion, bending, snapping about in the fluid, the form of the motion, not only of the turnover but of the flexing.

278

Q. That was the criterion by which you judged whether the results were better or worse?

A. That was the thing I watched for to see whether the washing action was being properly conducted; yes, sir.

Q. You made no tests as to the effectiveness so far as cleansing the clothes was concerned, either on the large load or the small load, did you?

A. Merely visual inspection. Of course, that is the criterion that most people go by in deciding whether a washing is complete or only partially complete.

Q. Have you ever been at the Maytag plant?

A. No, sir; I never have.

Q. Do you know anything about the use of soil cloths as means for determining the effectiveness of cleansing?

A. I have seen them practiced in commercial laundries.

Q. Do you know whether any washing machine manufacturers make use of such tools?

A. No, I don't know about that.

Q. Then what was the basis of your statement that most people go by visual inspection?

A. That is my experience and my belief. For instance, "most people" would include the average householder, and I doubt very much if they would have scientific means for determining when a washing was complete; but I think most women would know.

279

Q. Then am I to understand that the clothes came out any cleaner with a small load from the defendant's machine than with a large load, on the basis of your observation?

1351

A. I can't say that, sir, because I made no scientific tests to determine the relative cleanliness.

Q. You did not have any criticism to offer of the cleansing accomplished with the large load that you observed?

A. I never have tried that defendant's machine to overload it and see what it would do.

Mr. Bristol: I move to strike out that answer as not responsive.

Mr. Lane: I think it is responsive.

The Court: Objection overruled.

(Whereupon, the question was read by the reporter.)

A. I have never tested what I would consider a very large load or an over-load in the defendant's machine.

Q. Now, what was the basis of the statement you made in response to Mr. Lane's question that the defendant's machine washed better with a small load than a large load?

A. The experience, simply, with that type of machine. I consider this machine similar, practically alike, with many machines that I have tested, and I have with other machines of a similar type had that experience, but never with a General Electric.

280 Q. Under what conditions of load did you make these observations on the defendant's machine on which you testified in your direct examination?

A. Under what conditions?

Q. Yes.

A. I simply put the material in the tub and would see how it would operate.

Q. How much?

A. I don't know. I put in varying amounts, but in no case to a point where there was not free rollover.

Q. What was the maximum amount that you put in the tub of the defendant's machine?

A. Do you mean in weight?

Q. Yes. A. I don't know.

Q. What was the maximum amount in number of pieces, describing the pieces?

A. I don't believe I could tell you that, sir, because I made no record of it, either mentally or in my notebooks.

Q. You also made some comparison as to the performance of the defendant's machine with some Maytag machines, I believe. What Maytag wachines were you referring to in that comparison?

A. I believe in my testimony I was asked to compare them with first the machine which is fairly represented by

451

the patent drawing, and then by the other two machines to which my attention was called.

Q. Yes, I believe that is true. Now, what was that comparison based on, actually?

A. I doubt if I understand your question, sir.

281 Q. You testified as to some comparisons between some Maytag machines and the defendant's machine. What Maytag machines did you compare with the defendant's machine as the basis for that testimony?

A. Those three machines about which I testified.

Q. Now, you are referring to Plaintiff's Exhibits 9, 10, and 11, are you?

A. Yes, either those or similar ones; yes, sir.

Q. What loading conditions did you observe when you were making your observations for those comparisons?

A. I always followed the directions and put in enough material to give free movement of the goods in the tubs, and washed under those conditions.

Q. How much material did you put in each tub?

A. Well, I can't tell you. I never weighed the actual amount that I put in, that I recall. If I did, I have no record or memory of it.

Q. Have you any constitutional objection to weighing?

A. None whatever, but it simply is not important in my opinion for the reason as I have told you it depends on the size, quality, and shape of the goods, and other things.

Q. Can you describe the operation of the defendant's machine when it is loaded with six pounds of clothes?

A. No; I could guess at it but I have never seen it.

Q. You have never seen the operation of the defendant's apparatus in a glass tub, have you? A. No, sir.

282 Q. And your observation was made simply by looking down on the top of the tub?

A. Well, looking down into it, what one could see from above.

Q. You couldn't see what was going on at the base of the agitator, could you?

A. Yes, in some cases when the water was clear, I could, and when the water was soapy I couldn't.

Q. Could you see it when there was a large load of clothes in it?

A. I don't know because I don't—what I would call a large load would be one where there would be no roll over or violent action, and I haven't tried it. I know what would happen because I know what would happen in other machines of a similar type.

Q. Then your testimony that the action was better with smaller loads than with larger loads is purely a speculation?

A. No.

Q. It is not based on any observation of the defendant's machine?

A. Not of this particular machine; no, sir.

Q. Of the machines sold by the General Electric Supply Corporation?

A. Not overloaded, no, sir.

Q. So your testimony was speculative, wasn't it?

A. No, I wouldn't so characterize it. I think it is the result of experience which is definite.

Q. You referred to some determination of the effective area of the impeller of the machine shown in the Snyder patent, I believe?

283 A. Yes.

Q. What was your figure for that effective area?

A. May I explain what I mean by "effective area"?

Q. Oh, I would like to have you do that.

A. It would be a little clearer, perhaps, if I define my term, which is perhaps an unusual one and perhaps a flexible one.

Q. That is a rather common term, isn't it?

A. I never heard it used before in connection with a washing machine.

Q. Never mind about flexibility, but please at least tell us the sense of the term as you use it here in what you have testified to, that is, as to the effective area of the impeller of the Snyder patent?

A. By "effective area" I mean the area of the impeller that would produce the desired result, that would most effectively produce the desired result on the water and contents of one of these washing machines. The purpose of that impeller, of course, is to move a body of water with its contents of clothes vigorously in certain predetermined directions.

Q. Perhaps we can shorten this if you will get down to effective area. I don't want to cut you off. Let's have effective area first? A. I can't do it.

Mr. Lane: I think the witness should be allowed to proceed.

Mr. Bristol: All right. Proceed.

A. In order to do that it is necessary to move no more than the area of the thing to be moved by the moving ele-

284 ment, but its shape is important. For example, suppose we had a paddle wheel containing ten boards one foot square as paddles on the outside of the wheel. That would be much more effective as a paddle wheel than the same

number of square feet distributed around the circle as 120 cleats an inch high. One would produce merely local surface turbulance and the second would produce a mass movement of the water off the propeller blade. Therefore, in order to determine what is the effective area of a blade, we must take into consideration several things; first—

Q. (interrupting) May I interrupt you. Are you going to say that you estimate the area from the effect?

A. Now I don't know what I was going to say. I hadn't said it.

Q. Well, what units did you measure this effective area in?

A. Please, may I have on the record the fact that I haven't completed my answer?

Q. Let us have the fact on the record that you say you haven't completed your answer.

Mr. Lane: It seems to me it is proper to have the witness explain.

The Court: Ask him another question and permit him to answer.

Q. In what units did you determine the effective area of the impeller of the machine of the Snyder patent that
285 you referred to in your direct examination?

A. I figured for my own purpose two units, because I happened to have a millimeter scale and I figured it in millimeters and then reduced it to square inches.

Q. Will you give us either the square millimeters, or the square centimeters or the square inches that you arrived at for the effective area of the impeller of the Snyder patent?

A. No, sir; I will not, because it would be absolutely meaningless without explanation.

Q. Then I will change my question as follows: Will you give us the figure for whichever units you use and immediately following that, give us whatever explanation you want to so that the answer will be quite intelligible; but start your answer with the figure?

Mr. Lane: I don't think that can be required as to how he starts his answer. Go ahead and answer it in your own way.

A. I don't want to start with a figure which means absolutely nothing because I could immediately change that figure to anything I pleased.

The Court: Very well, then; say you can't answer the question.

The Witness: That is right; I can't.

Q. You did speak of the effective area of the im-
286 peller, on your direct examination, didn't you?
A. Yes, sir.
Q. You also spoke of the effective area of the impeller on the defendant's machine?
A. Yes, sir; as they were substantially alike.
Q. In arriving at that conclusion which you expressed that they were substantially alike, had you done any mathematical calculation?
A. On the measurements and the estimations of area I did a little arithmetic.
Q. Did you arrive at some figures as the result of those measurements?
A. I arrived at several sets of figures.
Q. Does the effective area of those impeller blades vary?
A. It is a matter of opinion as to what the effective area is, and that is what I was trying to explain to you, sir, when you stopped me. I couldn't give you absolutely definite figures for effective area; I can compare one with another and give you comparisons based on certain estimations. They may or may not be right.
Q. You did make a comparison in your direct testimony between the effective area of the impeller of the Snyder machine and the impeller of the defendant's machine?
287 A. Yes.
Q. Now, will you proceed and give us your explanation with all your estimations so that we can make our own estimates of the effective area and see whether we agree with you or not?
A. That is exactly what I am trying to do, sir.
Q. Proceed.
A. I made an assumption which may or may not be right. Any other assumption would have been just as good for my purposes, but I assumed for a reason that I tried to explain, I assumed the outer third of the vanes in both cases as being most effective. I do not want to understood as saying that constitutes the only effective area on those blades, because it does not. Every vane on it is effective to a certain extent. The outside ten percent is much more effective than the next ten percent in area; and certainly the outside third does not represent the sole or perhaps the best criterion for estimating effective area, but that is the area I took. Just for comparative purposes I took the outside third area in the two cases. I tried to get as nearly as I could the area of the impeller in the General Electric machine. I did not do that accurately, but it was sufficiently accurate for the purposes which I had in mind. Not having any planimeter, which is an instrument

for measuring areas accurately, I assumed and esti-
288 mated as best I could what the area of the outside third of that particular impeller was, and it came out roughly four and one-quarter square inches. That is not an accurate figure. It was gotten with a simple pocket rule and such estimate as I could make with the tools at hand. Then I took the same criterion for the Snyder impeller as illustrated in the Figure 4 of the patent in suit and again I estimated that the outside third—you will notice in this particular case most of the area is on the outside third—as about roughly 4 3/4 inches.

289 Q. Square inches?

A. Square inches, yes, sir. Now, I took into consideration also the fact that the speed of the General Electric machine was somewhat greater than the speed or rotation of the Snyder machine as we found it in use.

A. Now then, my basis for the statement that the effective area is practically the same in the two cases is first, that it produces the same results, from experience; and second that checking it in this very rough way it seems to agree fairly well with what I would expect from the performance and I therefore made the comparison on that basis.

Q. From the performance of what, Professor?

A. Of the machine reproduced or which seems to me to be the reproduction of the drawing of the Snyder patent as operated by me. I should say one other thing, sir, that in making the comparison of course I did not get square inches directly from a patent drawing. I assumed that the structure illustrated in the patent drawing was the same diameter across the top as the defendant's machine; therefore
290 I based my comparative areas, relative areas on similar sized machines. Do you understand?

Q. I wonder if I have understood you correctly.

A. I am not sure.

Q. You made the assumption that the patent drawing was enlarged up to the same diameter as the impeller of the defendant's machine?

A. No; the other way about. I assumed that this drawing which had no dimensions on it, I put on, I made dimensions or I assumed dimensions on it, that would make it comparable to the defendant's machine so as to reduce this drawing to the same scale as I would represent the defendant's machine.

Q. Well now, didn't you say that that drawing looked to you as though it was made from Plaintiff's Exhibit 9?

A. Yes, I would judge so.

Q. Then nevertheless, in your estimate of effective areas you did not scale the patent drawing to Exhibit 9, you scaled it to the defendant's machine instead?

A. No. I assumed that we had produced from the drawing a machine similar to Exhibit 9 but of the diameter of defendant's machine. I made them comparable, I thought.

Q. When you say the diameter of defendant's machine, what part of defendant's machine?

291 A. Well, we did it two ways. Oh, in defendant's machine,—I took the diameter of the tub as 22 inches.

Q. Then did you go to Figure 2 or Figure 1 of the patent and scale that tub for 22 inches?

A. I did both. You see, the Snyder patent does not represent a round tub so I took as nearly as I could the area and got a circle which would be equivalent in area to the cross section of the tub as represented in the drawing and I called that my diameter of my hypothetical tub, which I made 22 inches to conform to the diameter of the defendant's tub.

Q. Now, I may be a little thick in following you there but after you got your hypothetical circle how did you apply it to Figure 2 or Figure 1 or the impeller shown in Figure 4 of the Snyder patent?

A. I did two things. In fact, I made two computations, entirely separate. One of them was on the assumption that Figure 1 represented a round tub; that is not true but I made my computations on the assumption that that Figure 1 represented a round tub 22 inches in diameter, and from that I got an area of 1/3 of the impeller on the tips. Then to check it,—and it made very little difference, so little difference that it was well within the limit of the error of my method,—I then took Figure 2 and computed a circle of equal area to the cross section of the tub and I recomputed it on that same basis but it made, as I say, so little difference that it

292 was not worth mentioning and in any case I do not think my method is accurate enough to warrant going into tenths of an inch.

Q. Or even a half inch?

A. Well, I would say a half.

Q. Or even two inches?

A. Oh, yes; it is better than that.

Q. Now, you said you made some allowance for differences in speeds. What allowance did you make?

A. I made no allowance in figures, I made allowance in my statement. When I made my statement that the effective areas were comparable I took into consideration the fact that it was a different speed but that would not affect the actual figures. That is the one reason why I did not want to give you an actual figure to begin with and then stand or fall by it in your subsequent questions.

Q. Do I understand you to say that the difference in speed would not affect the ultimate performance?

A. I said very definitely the opposite.

Q. Perhaps I misunderstood your last answer. In giving your conclusions that they performed the same, you took account of some difference in speed, didn't you?

A. Yes, sir.

293 Q. In making your estimates of effective area which came out 4 1/4 for the defendant's machine against 4 3/4 square inches for the machine of the Snyder patent, you did not take into account speed?

A. Those figures were not predicated on speed at all. The result of the motion of two things, which I testified would be affected by the speed.

Q. Now, in making your allowance for the differences in speed, what speed did you take for the defendant's machine?

A. I think it was 63 if I recall.

Q. 63 what?

A. Oscillations per minute.

Q. And what speed did you take into consideration for the machine of the Snyder patent?

A. Something lower than that. I did not consciously figure any relative speeds. I simply knew that one was faster than the other and that the faster a thing moved the more effective would be a smaller area—in other words speed, to a certain extent would offset the effect of a smaller area on the blade but I made no definite numerical comparison between the two.

Q. Did you make a mental assumption? A. No.

Q. As to the speed of the machine in the Snyder patent?

A. No.

294 Q. Isn't it true that the energy imparted to the water, other things being equal, will vary with the square of the speed?

A. Yes, sir, it is, other things being equal.

Q. Then the matter of a few oscillations per minute difference in speed is going to make an effect which is not a straight line linear function? A. It might or might not.

Q. But is a square function?

A. It is not. It depends on so many factors that that would not be true.

Q. Just enumerate a few of the factors that that depends on, Professor?

A. Shape, and by shape I mean not only shape as regards area but shape as regards shape of the edges and curves and that sort of thing; relative distance from obstructions like the side of a tub or clothes or whatever happened

to be in there. There are so many factors, sir, I never would be able to make a numerical computation that would be at all satisfactory to either you or to me.

Q. Then can we have it this way, that your statement that [there] effective areas are the same is just a matter of your opinion?

A. No, sir. I did not say the effective areas were the same. I said they were substantially the same and I think it
295 is far more than my opinion. I think the results justify the assumption and prove that the statement is correct.

Q. Now, this figure that you gave me a little while ago of 4¼ square inches for the defendant's machine, effective area, and 4¾ square inches for the machine of the Snyder patent, effective area, was that one blade of each?

A. Yes, one blade.

Q. And did you take into account the fact that there are four blades in the machine of the Snyder patent and three in the defendant's machine? A. Yes, I did.

Q. When you made your comparisons of the defendant's machine with these Plaintiff's Exhibits 9, 10, and 11 what speed were the exhibits 9, 10 and 11 operating at?

A. I could not tell you. That was nearly three years ago that I made those tests, sir, and I don't remember. I could look it up for you, perhaps.

Q. And you were able to remember 63 oscillations per minute for the defendant's machine?

A. Yes, I counted [illegible] recently and it stuck in my memory.

Q. And you had not operated the defendant's machine until very recently, had you?

A. Never heard of it until very recently.

296 Q. So that your comparison about which you have testified here today in your direct examination was between something that you saw within the last few days, as far as the defendant's machine is concerned, and something that you examined three years ago so far as the exhibits 9, 10 and 11 are concerned?

A. Not wholly. The long series of tests which I made occurred nearly three years ago and of that I have complete records at home. I of course have seen the Maytag machines operate many many times since then and so my knowledge of what happens in one of these machines is not confined to what I saw three years ago, by any means, but my knowledge of what happens to the General Electric machine is confined to the last few weeks, in fact the last few days.

Q. Mr. Lane asked you about these Exhibits 9, 10 and 11. Which one of those machines is represented by the drawing of the Snyder patent?

A. If I remember correctly that is Exhibit 9. May I verify that?

Q. Please do, and take your copy of the patent with you, if you will, and let us make sure that we are right on that.

A. This Exhibit 9 is the one, I think it is the identical machine that I have used.

Q. Aren't you possibly confused with Number 10?

297 A. No, I think not. No, I think from what I see now Number 9 more nearly represents the patent drawing.

Q. I call your attention to the numbers on the patent drawing Figure 1, marked 104, 5 and 6.

A. That is a soap container which is not present on this machine and I never have seen a machine that did have it on.

Q. Well now, in what other respects does Exhibit 9 differ from the patent drawing?

A. I don't know. The essentials that I looked at, the general form of the impeller, the relation to the tub and the means for driving it appeared to me to be the same as the drawing but I have not gone into extreme detail. There may be some variations.

Q. Compare Exhibits 10 and 9 with the patent drawing so far as the clutch operating lever is concerned?

A. It has a slightly different handle, I notice. I do not know about the rest of the mechanism.

Q. Which one is shown on the patent drawing, the one on Exhibit 9 or the one on Exhibit 10?

A. So far as that particular mechanism is concerned I would think it was—I don't know, sir.

Q. Now, can you find the clutch handle shown on the patent drawing?

A. I think so. That appears to me to be Number 90

298 but I am not certain, 89 or 90 and that would appear to me to be nearer like the one shown on Number 9. I am still of the opinion that Number 9 is the better representation than this one (10) because this has a rather different handle than this that is shown here.

Q. Isn't this a more compelling reason. Please note what corner the clutch handle is on with regard to the corner where the wringer post is located?

A. I don't think you are right there Mr. Bristol. This is a cut-away section and it might quite well be—I don't know but it might quite well be that that was in front. From Figure 3 it would appear to be in a different location but I am not at all certain, from this superficial examination but I will say this, that in general the tub and impeller, regard-

less of the details of the driving mechanism, do seem to me to represent the Snyder disclosure in suit.

Q. Now, what I have been trying to call your attention to is the fact that on Exhibit 9 the clutch operating handle is on a corner adjacent to the corner where the wringer post stands and Figure 3 of the patent shows that same relation, does it not?

A. It is upside down of course, this does not show whether it is looking up from the bottom or down from the top and I can't tell.

299 Q. Now, referring to Exhibit 10, the clutch operating handle is on a corner diametrically opposite to the wringer post? A. That is correct, yes.

Q. So the patent drawing cannot be made from Exhibit 10? A. Not in every detail.

Q. Now, will you refer to the belt guard both of Exhibit 9 and Exhibit 10 and the idler and tell me which one corresponds to the patent drawing, if either?

A. I don't think that either of them do exactly. The function and the result would be the same but I do not think in every detail they do conform.

Q. Did you look at Exhibit 10?

A. I cannot see it very well because the guards are covering it up. I would want to take it apart before I made any definite statements about it.

Q. Now, from reading the Snyder patent, what speed did you arrive at if you were going to take that patent and construct a machine?

A. I would make it one of such a speed as would produce the result described and that would be a matter of experiment and would depend on exactly the way I built my tub and my impeller, the relative proportions and that sort of thing. It would be a matter of experimentation with me.

300 Q. Wouldn't that depend on whether you had a large load of clothes or a small load of clothes in it?

A. No, sir, I never would use nor contemplate using in that machine what I have defined as a heavy load of clothes, one that would not react as contemplated in the patent. I do not think it is intended for what I call a heavy load of clothes.

Q. Do you find anything in the patent that says "use a small load of clothes"? A. No, it simply says use—

Mr. Bristol: Did you get his answer "no"? That is the first thing I want.

The Reporter: Yes.

Q. Now, complete your explanation.

A. I thought I was trying to.

Q. I was not sure that the reporter got the first word of your answer.

Mr. Lane: Read the question and answer.

(Last question and answer read by the reporter).

A. (Continuing) It simply says use such a load as will produce the results described, namely a free movement substantially above the blades and out of rubbing contact with the impeller or the sides of the tub.

Q. Doesn't that vary with the speed at which the agi-
301 tator is operated? A. Yes, and many other factors.

Q. In your direct examination I believe you made some reference to the speed of the machine of the Snyder patent as compared with the speed of the peg dolly machines. Did you make a comparison of them? A. You mean today?

Q. Yes, today in your testimony?

A. I don't recall.

Q. I mean did you testify—

A. That I don't recall but it is my experience that the impeller type machines does operate faster than the dolly type machines that I operated myself.

Q. Now, your testimony on that point was confined, was it not, to the machine shown in the drawing and description of the Snyder patent?

A. No, I would intend or at least my experience would be that all or virtually all impeller type machines that I have worked with operate at a higher speed than any of the peg dolly type that I have operated with.

Q. What speeds are you assuming as the speed for the peg dolly type?

A. Again, I do not recall exactly but I think they were
302 not more than forty or over.

Q. Would you say that a speed of forty would not produce the circulation of the water that is described in the Snyder patent?

A. It would if there was not anything in it.

Q. And would you say that a speed of forty would not produce the action described in the Snyder patent if a light load of clothes were in place?

A. I would want to define my light load of clothes. For example it might be possible, I don't know because I never tried it but it might be possible to wash a silk veil or something of that sort which would easily float, a single piece of it, at forty.

Q. At a speed of forty?

A. I never tried it. Certainly it would roll over but it would not be a very effective washing operation.

Q. You have never actually tried this agitator machine at speeds lower than 55 or 60 have you?

A. Yes. Please let me say that I do not want to characterize these machines as agitator type machines. I do not think they are. I think that is a perfectly improper term to use for them.

Q. What term would you prefer to use?

A. I would prefer to use impeller.

303 Q. Very well, let us use the term impeller. Now, will you answer the question? A. What was it?

(Last question read by the reporter as follows: "You have never actually tried this impeller machine at speeds lower than 55 or 60 have you.")

A. I don't recall, sir.

Q. You made some reference to the agitator or activator and I do not want to misquote you, of the defendant's machine as imperforate, I think. Will you look at this agitator again and tell us what you have to say about the three holes which occur there near the base and a little above it?

A. I was aware of those holes when I characterized this as an imperforate disc. Those holes are for the purpose of permitting one to raise this out of the water but it does not permit the flow of water in and out when the thing is in operation. This base member fits down on the driving mechanism inside of the tub and in order to draw it up, unless those holes were present there would be a suction created underneath and it would be very difficult to get it up but they have no function, so far as the operations of the washing machine is concerned other than to permit easy withdrawal of the impeller from the machine when water was present, and I was aware of that when I made my statement.

304 Q. There is no doubt that those holes are open clear through from the outside to the inside of the impeller, is there? A. Yes, sir, that is true.

Q. Now, will you refer to Plaintiff's Exhibit 12 A which has been introduced in evidence and comment with regard to the extent of the agitator blades beyond the base of the agitator in the actual impeller as compared with the showing in the drawing?

A. Well, the drawing of course cannot show accurately what we see here because no two blades are opposite each other, since there are three in one case—there are three on that blade. Therefore it would look from the drawing as if these did not project. As a matter of fact it is a correct rep-

resentation of what one would see if looked at from a position that I now hold and I am looking at it toward one of those blades; then the blades would seem not to project but as a matter of fact they do.

Q. In order to improve the clarity of that showing, won't you just measure the extent of the blade on the actual agitator beyond the disc in inches and note it on the drawing?

A. Approximately ¾ of an inch.

Q. Just mark a lead line indicating that for us.

A. (Witness marks on Plaintiff's Exhibit 12 A.). I have written on here at this point, being directed at the extreme outside edge of the propeller "projects approximately ¾ of an inch beyond the disc."

305

Q. That is fine, thank you. Is the same true with respect to the showing on Plaintiff's Exhibit 12 B?

A. If the same impeller is involved and I assume it is, that same thing would be true.

Q. Now, you seem to object to the statement in some of the literature that the activator gets the dirt. Please tell us why you object to that statement?

A. Why, it is a correct enough statement if one understands what is meant. Certainly the action of the activator results in getting rid of the dirt and that might be a perfectly proper colloquial way of stating the facts. I simply don't like it as a proper designation of what occurs. It is only a personal matter.

Q. Now, you have seen these statements published by the Maytag Company, haven't you, that the Gyrafoam machine washes by water action alone?

A. I don't know. I have heard that statement used a great deal. Whether I have seen it in print I don't recall.

Q. Do you disagree with that also?

A. No, I think that is true.

Q. You have not studied the appearance of clothes as they come off the activator or impeller in the Defendant's machine by observation through a glass tub have you?

306

A. Yes. Oh, the defendant's machine—no, sir.

Mr. Bristol: That is all.

Redirect Examination.

By Mr. Lane:

Q. Now, Professor Kenerson, you have been interrogated about the defendant's machine. Have you had occasion to test and see tested in glass tubs a machine which substantially corresponds to that machine, to-wit the Easy machine? A. Yes, sir.

Q. I call your attention to a picture of that or a cut and ask you what that shows, if you know?

A. That fairly represents diagramatically a cross section of the Easy machine.

Q. From your experience with that machine and your knowledge of it have you any occasion to change your testimony at all? A. None whatever.

Q. Was that one of the machines charged to infringe in the Brooklyn Edison case? A. It was.

Mr. Lane: I offer that in evidence as Plaintiff's Exhibit 17.

(Picture referred to marked Plaintiff's Exhibit 17 and received in evidence).

307 Q. Was the spacing of the impeller in the interior of the tub substantially the same in that machine as in defendant's machine? A. Yes, sir.

Q. How about the effective areas as you have described of the impeller blades in that machine with respect to the General Electric machine?

Mr. Bristol: I do not believe he has had time to compute that, Mr. Lane?

Mr. Lane: Let me go on with this please.

A. Without computing it, I would estimate that they were approximately the same.

Q. How did the two machines operate so far as their operations are concerned when loaded as directed to be loaded?

A. They operated substantially the same and with the same result.

Q. Now, did you at my instance measure the relative distances between the interior of the tub and the impeller with a 23 inch tub and the same distance in the defendant's machine with its 23 inch tub? A. I did.

Q. With what results?

Mr. Bristol: That is the round tub you are talking about now Mr. Lane?

308 Mr. Lane: I am talking about that tub and the patent drawing of Snyder.

A. If the Snyder machine were proportioned as in the drawing of the patent and the tubs were a 22 inch tub, then the impeller would be about 12.7 inches, just a little less than 12¾ inches in the diameter; whereas the actual defendant's structure is 13 inches in diameter of the circle through the outside edge of the vanes.

Mr. Lane: That is all.

The Court: Call your next witness.

Mr. Bristol: If your Honor please, I am not sure I understand what that witness means and I would like to clear that up.

The Court: All right.

Recross Examination.

By Mr. Bristol:

Q. Your figure of 13 inches applies to what on this impeller from the defendant's machine, Plaintiff's Exhibit 12?

A. The diameter of the circle passing through the extreme edge of the blades. It is not a dimension that exists on the machine itself.

Q. It is not a dimension of the base of the agitator?

A. No, sir.

309 (A recess was taken).

Mr. Bristol: If your Honor please, I have asked Mr. Lane if he would have the clothes weighed before he puts them in for his demonstrations. Mr. Lane says that it normally was not his intention to do that. I would like to ask for a ruling from your Honor as to whether or not that may not be done while the clothes are dry and before they are put in the machine.

Mr. Lane: What I said to Mr. Bristol was this that we never had weighed them in any of our practice, nor had I known of any such instance happening. I told him I had no objection to his weighing them. I do not see any reason for a ruling on it.

Mr. Bristol: I assume that these demonstrations will be conducted by a witness who is sworn and subject to cross-examination.

Mr. Lane: Certainly.

Mr. Bristol: Then I would like to have the witness weigh the clothes before he puts them in because I cannot weigh them on cross-examination after they are all wet.

Mr. Lane: You can weigh them and put your own witness on.

The Court: I don't know whether there is anything before the Court or not but I will say this; of course, the
310 Court will not require the plaintiff to do anything in this demonstration he does not desire to do, but I think

that the plaintiff would consider any reasonable request that might be made by his adversary.

Mr. Lane: I am entirely in accord with that.

The Court: If Mr. Lane hesitates himself about weighing them, I have a notion to weigh them myself, to relieve you of all this difficulty, but I don't think I shall.

Mr. Lane: I do not want to give the impression that we did not want to weigh the clothes.

The Court: I would weigh them, but I do not think that would be of any consequence, but it might be.

(Whereupon the Court left the bench and moved to where several washing machines were set up for a demonstration of the machines).

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311 WALTER BONES, recalled, for further redirect examination.

Redirect Examination.

By Mr. Lane:

Q. You testified in your examination concerning the way in which Mr. Snyder showed you how to operate this Maytag machine in reference to lace curtains which you produced for his test at that time because of the delicate character of them? A. Yes.

Q. Have you some lace curtains here? And will you show the Court just how that was done by Mr. Snyder at that time, with the machine which I understand is a duplicate of Plaintiff's Exhibit 9? First show the Court the condition of the curtain. Before you put them in the machine the defendant would like to weigh them.

Mr. Bristol: Yes, we will give the amount to the reporter and you can check it or mark it as you choose.

The Witness: I stated at that time I used a pair of curtains. This is about the type curtain that was washed. They are very old curtains. You will notice that they are very fragile; you just touch them and they will come to pieces. I will put these in before I put the soap in so as to show the action of the machine without soap in the water.

Q. Will you put the soap in and do that first please and duplicate the way that Mr. Snyder did in 1922?

Mr. Bristol: Just a minute, Mr. Lane. Here is the weight of these curtains. The curtains which the witness has handed me have a weight on this scale of 3⅜ ounces.

312 The Witness: These curtains are a little dirtier than you will find in the average wash. I am opening a box of Rinso soap to put in the tub. I am starting the machine, starting the water in action, and adding the soap on top of the water.

Mr. Bristol: Would you have the witness tell us just how much soap he puts in.

A. Sufficient to make a good lather. I would prefer to have a bar of soap, but I do not have any dissolved.

Mr. Bristol: That is five handfuls you have put in or six handfuls.

A. I did not count them. It wasn't a case of a handful each time however, only partly full.

Mr. Bristol: That is one more handful that has gone into the tub.

Mr. Lane: Yes.

A. I am going to time these from a minute and a half to two minutes.

Mr. Bristol: Let the reporter note that the machine was shut off at the end of two minutes.

The Witness: The cloth as I now take it out is cleaned and holes are the same as they were when it was put in. The second curtain is clean and the holes are the same as they were when the curtain was put in. That is the condition that I found when Mr. Snyder showed me how to operate that machine. To show you the condition of these curtains just
313 pull on the curtain and you will see how fragile it is. The slightest pull causes the garment to tear; it is supposed to be about twenty years old. They weren't injured at all in the operation.

Now, we will put in overalls. These are garments selected from a machine shop, a railroad man has been wearing them and they are just as greasy and dirty as it is possible to get them, I think. I will hand them to Mr. Bristol for weighing.

Mr. Bristol: The weight of the pair of overalls, is 2 pounds and 8 ounces.

The Witness: That water is not as warm as it should be, but we will give those about eight to ten minutes.

Q. Now, will you show the operation through the glass tub? We have a glass sided machine here which I will ask you to operate with the different materials, to show the turn-over of the clothes in the actual construction.

A. The machine, Model 32, with the glass sided tub, glass side walls, is filled with water to the water line, without soap. It is in motion and it shows the roll-over of the water. I will place a rubber in the tub to show the travel of the water. The second rubber is placed in it to show you that is drawn down in the center and it travels out at the sides up at the side walls in at the center and down, a constant and continuous roll-over without any dead space in the tub. A third piece of red rubber is placed in it showing the travel of the third piece, and the fourth and fifth pieces are placed
314 in it. Looking through the side walls of the tub you can see the roll-over, the rolling and rolling of the pieces, the same action that the washing fluid has on a lace curtain or any other fragile garment.

I would say there is very very little, if any substantial contact with the blades or with the side walls of the tub. It would be hard to measure the turn-over on those pieces in that operation, to count the number of times every minute, or the distance traveled for a minute, but it is real rapid. That is the way Mr. Snyder ran the machine in my presence and told me how to operate it. And he showed me how to demonstrate it and not only demonstrate it to the housewife, but also to the sales organization. We did not use glass tubs then, not in the early days; just recently have we used the glass tubs.

Q. Will you put in some more pieces that have colors on them so we can see them?

Mr. Bristol: I would like to have you weigh those.

Mr. Lane: They are just a couple of little pieces.

Mr. Bristol: How much do they weigh, Mr. Bones?

The Witness: I have no idea.

Mr. Bristol: Have you got a duplicate we can weigh?

A. No sir, I haven't.

Q. There seems to be no soap in the water?

A. I will put some more in the tub that has the overalls in.

Mr. Bristol: How much more, Mr. Bones, one, two, three, four, five handfuls?

Mr. Lane: I object to his testimony.

The Court: I don't think he is testifying; he is counting.

315 Mr. Bristol: Five handfuls of soap in the little machine.

The Court: What Mr. Bristol said, of course, is not testimony, and will not be considered as testimony.

A. Look through the side walls of the tub, and you can see that the garments are acted upon by the water currents from all directions and kept separate and have a free roll-over. The water should be about 145 degrees temperature for garments like the overalls and this is too cool. When we make a demonstration in a dealer's store we put a mirror up above the machine to cover the wringer and the mirror will pick up the water action and you can see it for a half block down the street.

Q. You do not attempt to wash clothes in those machines with a glass tub, do you, but simply demonstrate the water action in that machine?

A. That is right, we show the roll-over in them.

Q. It would not be feasible to wash clothes in that machine with the glass sides?

A. No, sir, it would not.

Mr. Lane: How much time has been occupied with that?

Mr. Kenerson: The time was ten minutes.

A. I am now taking the overalls that are washed out of the machine.

Q. What is the condition of the water in this tub after you have taken the clothes out?

A. The water is altogether too cool; they are not washed as they should be.

Q. What is the condition of the water as far as the appearance is concerned as to soil?

316 A. It is quite dirty. These are not properly washed, you can tell that by the feel of them.

Q. What is that due to?

A. That is due to the water being too cool. That is not a good job because I can hold my hand in the water and it is just too cool.

Q. May I ask you just one question. You have given similar demonstrations with similar conditions of clothes with proper temperature of water with what result?

A. Washed perfectly clean, as clean as a garment could be washed, in eight to ten minutes.

Recross Examination.

By Mr. Bristol:

Q. Just to get these figures on the record, Mr. Bones, do you accept my statement that the two lace curtains which you put in for your first demonstration into the Exhibit 9 machine weighed 3⅜ ounces?

A. I really did not look at the scale when you were weighing; I could not say.

The Court: I understood that it was correct and I would assume that if I were you.

Q. And do you accept the weight of the overalls which you later put in as two pounds eight ounces?

A. Yes sir.

Q. And is it not true that those overalls were soaked with kerosene?

A. I would not say soaked with kerosene, no, sir.

Q. How would you describe them?

A. The greasy spots were treated with kerosene, yes,
317 sir.

Q. Was there any part on the overalls that had not been treated with kerosene? A. Yes, sir.

Q. What is the purpose of the kerosene treatment?

A. We always do it in washing garments of that kind. That is a proper procedure in washing any greasy overalls or mechanic's clothes.

Q. And that aids the removal of the soil, doesn't it?

A. Yes, sir.

Q. How much soap did you put into the Exhibit 9 machine, or Rinso, I should say? A. I didn't measure it.

Q. Perhaps you can estimate it for me. The box was full when you started out, was it not?

Mr. Lane: I emptied out about two handfuls in washing my hands just now.

The Witness: I did the same thing.

Q. Now, will you estimate how much has been removed from the box in ounces and after that estimate how much of that went into the machine for your demonstrations?

A. I would say probably about a third of the box would be about right.

Q. And the contents of the box net is how many ounces?

A. I don't believe they show the weight on the box.

Q. Yes, there is a statement on it, I think.

Mr. Lane: He cannot do any better than give you what the statement says on the thing, can he?

318 A. 22½ ounces.

Q. And you think about a third of that went into the machine?

A. I think so. We use a bar and a half to two bars—

Q. Will you answer the question and then make your explanations?

A. I said one third of it before you asked the question.

Q. I am sorry. Would you call two pounds and eight ounces a light or a heavy load for that machine?

A. I would say it is about right with overalls of that kind.

Q. In addition to the rubber tracers which you put into the glass walled machine, you put some other cloth, didn't you? A. Yes, they are just wash cloths.

Q. And how many of them?

A. I think there is three.

Q. And what is the approximate weight of each one of those?

A. I would not know. We were not washing those, It was just a tracer cloth to show the travel of the water.

Q. That travel can be seen better in the glass sided machine than it can be in the solid aluminum tub, can it not?

A. Than it can in the solid side wall?

Q. Yes. A. Yes, sir.

Q. And when you had the lace curtains in Exhibit 9 with the suds in there could you see what was going on underneath the water at all? A. No, sir.

Q. You would see better what was going on if you had a glass tub instead of the aluminum tub wouldn't you?

A. You wouldn't see any better from the results, no.

Mr. Bristol: That is all.

(Witness Excused)

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319 Mr. Lane: Plaintiff rests, your Honor.

Plaintiff Rests.

The Court: Call your first witness, Mr. Bristol.

Mr. Bristol: If your Honor please, I would like to adjourn to the Hotel Baltimore where we have a room and are prepared to put on a show.

The Court: All right, we will go right over to the Hotel Baltimore.

(Thereupon Court adjourned, to the Doric Room on the Mezzanine floor of the Baltimore Hotel in Kansas City, Missouri.)

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320 4 P.M. Tuesday, November 30, 1937,
Doric Room, Baltimore Hotel,
Kansas City, Missouri.

(Thereupon the defendant, to sustain the issues on its part, offered and introduced the following testimony, oral and documentary, to-wit:)

Mr. Bristol: I offer in evidence as Defendant's Exhibit 13 a book of prior art patents containing the following: Doughty and Davis, Number 1,496,305; Jardine, British, 18,202 of 1891; Davis 1,240,826; Morse 106,853; Hanna, British, 19027 of 1889; Runkle 131,629; Henin, French patent 363,514 and a translation thereof which has been stipulated by the stipulation, Plaintiff's Exhibit 2, to be correct, subject to correction of error, if error appear; Ferguson, Number 83145; Hermance 88478; Groat, 113,762; Mills, 1,118,210, Snyder 1,209,893, Marchand 273,569 and Foster and Garrison 832,787. All of these patents, with the exception of the last two mentioned are set up in the Answer of the defendant. As to the last two mentioned they are not offered except to show the state of the art.

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321 ARTHUR F. TAGGART, of lawful age, being produced, sworn and examined as a witness on behalf of the Defendant, testified as follows:

Direct Examination.

By Mr. Bristol:

Q. Professor Taggart, will you state your residence and occupation?

A. My residence is Scarsdale, New York; my occupation Professor of Mineral Dressing at Columbia University.

Q. Will you give us a statement, please, of your education and experience and the qualifications which you have, which have a bearing on the question of washing and washing machines?

A. I have the degree of Bachelor of Arts and Engineer of Mines from Stanford University; I have been engaged for some twenty-five years in the study and practice and teaching of mineral dressing and allied processes, in particular of one process of mineral dressing which has to do very particularly with the agitation of water suspension of solids and in connection with that work I have done considerable research on the movements of liquids in response to impellers in containers. I have studied specifically the action and construction of washing machines within about the last four years.

Q. Will you explain please the phenomena which occur in cleaning clothes by washing?

322 A. Clothes consist of threads of various kinds and materials that are woven together, very much as the wires of ordinary window screen wire is woven except somewhat tighter, closer together. Each of the threads is comprised of a large number of fibers of the particular material, cotton or flax, artificial fiber as the case may be, that comprises the base of the fabric. These fibers are twisted more or less tightly in a thread; there will be from 15 or 20 fibers to perhaps 200 in an individual thread. Most of the dirts that we have to deal with are very small particles of solid matter and these particles of solid matter adhere to the fibers of the threads and that comprises, when there is enough of them present to give a color, what we call a piece of dirty fabric. These particles are not merely on the outer fibers of the threads but also on the inner fibers, because of the fact that when the fibers are twisted together there are spaces between them much larger than the fibers themselves, while the dirt particles are perhaps a tenth, twentieth or fiftieth of the diameter of an individual fiber, so that there is a great deal of open space left between the fibers when you consider those openings in comparison to the size of the particle.

323 Now, washing consists in first loosening the dirt particles from the thread fibers, and that the soap does, and then in moving the water that contains those loosened particles in suspension out from and away from the threads. The only way that you can do that is by causing the fibers to come close together, just as when you squeeze a sponge, you squeeze the material of the sponge close together, close up the pores and force out the water that was in the pores. Now, you must do exactly that with each thread of the fiber in order to cause the water, with its suspended dirt, to go out. That water that was in a fiber contains a lot of dirt in the fiber relative to the cleaner water outside. When you squeeze the fiber and force out that water it mixes with the water outside, becomes diluted, then when you open the fiber up again by releasing the strain on it, as when you open your hand on the sponge, the relatively clean water from outside comes in again, picks up another load of small particles and when you squeeze again, goes out. That process, repeated a number of times, comprises washing and will result in cleansing.

Q. Are you familiar with the action of the machine described in the Snyder patent in suit, Number 1,866,779?

A. I am.

Q. And are you familiar with the action of the defendant's machine Model AW-19, such as illustrated in Plaintiff's Exhibit 12 in this case?

324 A. I am.

Q. Are you also familiar with the action of the machine described in the British patent to Jardine, Number 18202 of 1891?

A. Yes.

Q. And are you familiar with the action of the machine described in the Doughty and Davis patent Number 1,496,305?

A. Yes, sir.

Q. Are you prepared with apparatus to demonstrate the action on these machines in tubs with transparent walls,—in transparent tubs?

A. Yes.

Q. Please identify the various machines with the patents to which they are related?

A. The machine on the platform at the left and labeled "Snyder" is a representation of the apparatus pictured and described in the patent in suit except that it has a glass tub instead of a metal tub.

Mr. Bristol: I shall ask that this machine be marked Defendant's Exhibit 14.

(Machine referred to marked Defendant's Exhibit 14 for identification).

Q. Now, will you proceed with your identification of the other apparatus?

325 A. The machine to the right of it on the platform labeled "Doughty and Davis 1900, Form 4" is like the drawing and description of the Doughty and Davis patent with the exception, so for as the specific drawing is concerned, that the center of the agitator has a small metal nubbin instead of a dome, a flat dome, and that the blades of the impeller at either inner end which in the patent drawing are shown abutting the dome do not abut the absent dome but are of the same relative length as those in the patent drawing.

Mr. Bristol: I ask that the machine which the witness has identified be marked defendant's Exhibit 15.

(Machine referred to marked Defendant's Exhibit 15 for identification).

Q. Will you proceed?

A. The tub and impeller of the next machine are reproductions of the drawing and description of the Jardine patent drawing. The driving mechanism is part of a standard washing machine that is not pictured in the Jardine aparatus, there being no definite driving mechanism pictured in the drawing of the Jardine apparatus.

Mr. Bristol: I ask that the machine which the witness has identified be marked Defendant's Exhibit 16.

(Machine referred to marked Defendant's Exhibit 16 for identification).

326 Q. Proceed, please?

A. I might amplify that statement with respect to the tub and things that are in it, that there is a slight difference in proportions with respect to the position of the baffles that are shown along the walls of this tub and the outer end of the wings of the impeller, in that the lower end of the baffles in the tub here project down slightly further than is indicated in the drawing of the Jardine patent. As this apparatus was originally made the tub wall was slightly higher than it is here to give the same proportions as were shown in the patent drawing. The tub wall was broken in shipment to Kansas City and we had to substitute this tub with slightly lower walls; therefore the lower end of the baffles comes closer to the disc of the impeller than is shown in the patent drawing.

Q. Now, will you proceed to identify the apparatus which corresponds to the defendant's machine?

A. The apparatus fourth in line on the platform labeled "defendant" is the apparatus of the AW-19 Model except that it has a glass tub in place of a metal tub.

Q. Now, will you please explain and demonstrate, referring where convenient to the patents which have been introduced in evidence, the action of these four machines, Defendant's Exhibits 14, 15, 16 and 17 under similar conditions with respect to the movement of the water?

327 Mr. Bristol: Mr. Swanson called my attention to the fact that I have not offered the glass tub Defendant's machine in evidence. I ask that it be marked in evidence Defendant's Exhibit 17.

(Machine referred to marked Defendant's Exhibit 17 for identification and received in evidence).

Mr. Lane: I am going to reserve my right to object to the models as the case goes along.

(Defendant's Exhibits 14, 15, 16 and 17 were set in motion by operators upon the platform).

The Witness: (To operator) Will you put one bandana handkerchief in each machine please.

(Operator complies).

A. The four machines described are now operating, each with a load of water at substantially room temperature and each with a red bandana handkerchief in the tub. In the machine of the patent in suit it can be seen that the water is agitated and is being thrown out from the periphery of the impeller toward the side walls of the machine, travelling up the side walls and building up somewhat on the edges of the tub, then running down along the surface toward the center of the tub and that there is a downward current at the
328 center backward toward the impeller. At the same time, by looking at the bubbles it can be seen that as they rise they turn slightly from the vertical along the tub wall indicating that there is a small amount of circumferentially directed movement of the water in one direction and then in another as the impeller reverses. There can be seen V shaped depressions in the surface of the water in the tub, that are produced because two currents of the water at the surface come together and meet there and as they do so turn down from the surface of the water. It can be seen that the bandana is following in part the motion of the water in that it tends to make circles in the tub outward from the impeller, upward along the side wall, inward at or under the surface of the water and thence downward again to the impeller. It also makes auxiliary circuits near the tub wall where it does not get entirely into the impeller, indicating a certain amount of the eddying in the zone that is near the tub wall and at the same time that it is being moved around thus there is a certain amount of bending and folding of the fabric and such motion of the fabric, if it is sufficiently acute and sharp to distort the threads, will cause some expulsion of water from the fibers, and to that extent produce some washing. It will be noted in looking at this bandana that there is no reflection in it of these currents of water that are meeting. They
329 should, if they were affecting the movement of the bandana, cause it to be crumpled together as they come in from one side and from the other side and as the bandana stretched out across is affected by both. That does not occur, which indicates that those meeting currents that are definitely indicated at the surface by the movement do not extend down in the water far enough or are not sufficiently strong under the water to crumple the handkerchief and cause any washing action therefor. It will be noticed also that the handkerchief moves around the edges of the tub horizontally, moving rather suddenly, ordinarily, when it makes a side wise move-

ment. That movement is in response of catching of the handkerchief on the blades of the impeller and dragging the handkerchief through the water by reason of that catching. At the time when the handkerchief is not caught by the blade it turns in substantially one position in the machine.

In the machine next before us, the Doughty and Davis Form 4 machine, the same kind of action is taking place, different from the action of the Snyder machine in the velocity of movement of the bandana and in velocity of movement of the water.

Mr. Lane: May I ask you the oscillation of the one that you called Snyder?

The Witness: 52 at 230 or 232.

330 Mr. Lane: What is the one of the Doughty and Davis?

The Witness: Forty-two at about 180; 42 oscillations per minute at about 180 degrees of rotation.

The surface of the water in the Doughty and Davis machine shows the same kind of beads, not so deep as in the Snyder machine. Examination of the surface shows the same horizontal swishing at the surface which causes those beads. The handkerchief moves around at times suspended in the water, at other times coming down to the impeller as in the Snyder machine. When it is touched by the impeller it is not dragged, ordinarily as far or as quickly because of the fact that the blades on the impeller in the Doughty machine do not project so far from the surface of the disc and therefore do not so readily catch the handkerchief. The fabric in turning over is manipulated and deformed by the water current, as can be seen and in so far as that manipulation is sufficient to deform the threads, washing is effected thereby. There is the same travel of the fabric outward toward the wall, upward, not so far inward in this apparatus as sometimes occurs in the Snyder apparatus but the turn-over next to the wall is the same thing as is now occurring in parallel with the Doughty and the Snyder.

331 The handkerchief in the Doughty and Davis machine travels around the tub; it is now at the back of the tub; a minute ago it was at the front. As was stated it does not make as frequent complete circuits of the tub as does the handkerchief in the Snyder, because of the fact that the Doughty and Davis blades do not project at the ends as far from the face of the impeller as they do in the Snyder and therefore do not drag as far when they catch the fabric.

In the Jardine machine the handkerchief indicates the same kind of motion taking place as in the other two machines, namely water outward at the bottom, along the disc of the impeller to the wall of the tub, thence upward along the side, inward at the top toward the center post and down with the same action of internal eddies or subsidiary eddies as it were, next to the wall, so that with the single piece in most
332 of the turn-over across next to the wall. Also because of the fact of the center post the horizontal path of the general eddy is shorter than it is in the other two machines while preserving the same nature of eddy.

Mr. Lane: I wonder if you have any objection to his telling how fast that is operating.

Mr. Bristol: I would be glad to have him do that right now. That was my question as soon as he has finished with the defendant's machine, I was going to have him give you the speeds of all of these, Mr. Lane.

A. The rate of oscillation of the Jardine impeller is about 59 oscillations per minute at about 180 degrees amplitude. It will be noted that occasionally the handkerchief or a part of it catches under the lower edge of one or another of the baffles in the tub. These baffles are in there in order that the apparatus, as here presented, may represent in detail the pictured apparatus of the Jardine patent. They have no function whatsoever in this apparatus when operated with an oscillating impeller. They are an essential part of the operation of the apparatus when it is operated with a continuously revolving impeller as was an alternative stated method in the Jardine patent. Under such circumstances without these baffles, the water will move out to the side of the tub con-
333 tinuously swirling in one direction. Anything that it has in it will be similarly moved out and swirled circumferentially around the tub; if the rate of rotation is high enough then the water climbs up and goes over the surface until such time as it has been spilled out to the capacity that it can contain at that speed of rotation. Now, the minute you put the baffles in there you change the character of that rotation, of that action. It slows down the rotation of the water, causes the water that is thrown out to the walls by the impellers to travel substantially vertically up the wall and then run down into the impeller again and thus get a parallel effect to that that you get with the oscillating device without the blade, so that in this apparatus operated without blades as it would be with an oscillating impeller, there would be none of that tendency to catch. The blades were cut off in the Jardine machine so that when there is a heavy load of

fabric in the machine and the fabric is dragging around down here on the disc level as it is, the dragged fabric does not drag against these blades and consequently putting a harder power on the apparatus it didn't catch and tear as it might with the blades down—I mean with the baffles down so that the baffles are cut off and in the apparatus pictured the lower end would be nearly an inch above the lower end now there, to preserve the proportions that are shown in the pat-
334 ent.

In the apparatus of the defendant the water is as in the other machine traveling outward at the bottom, upward along the wall, inward along the top and under the top and downward along the center post and the bandana handkerchief follows to a certain extent that path, follows the eddies that are within that path also and therefore travels up along the wall inward, downward, outward and repeat. We have the same kind of surface action, the same swaying back and forth of the bubbles indicating a certain amount of circumferential movement underneath the water, the same absence of any effect of the meeting currents in the washing, crumpling of the fabric and to the extent that that crumpling will deform the threads, washing thereby. There is contact of the handkerchief with the blades of the impeller on a certain part of the circuits and when that contact occurs the handkerchief tends to be dragged around quickly from one part of the tub to another in a circumferential direction. The velocity of that handkerchief in the Snyder machine, taking an average length of path, as it can be observed and measured in the machine, and counting the number of circuits that the handkerchief makes in a given length of time figures out to about one mile per hour which is the speed of a rather slow, ambling walk and that will give some measure of the
335 violence of the agitation in that and in the other machine; the Doughty and Davis a little slower, the Jardine a little slower, the Doughty-Davis slower than the Jardine because of the slower rate of movement of the impeller. The rate in the defendant's machine apparently about the same as the rate in the Snyder machine.

Mr. Lane: Is that a string coming off the bandana in the Doughty and Davis machine?

Q. Professor, in order that we may have side by side a note of them, will you please give us again the rate of speed and the degree of oscillations with which these four machines are operating?

Mr. Lane: Will you also give the water contents, too?

Q. And the water content if you can?

A. The Snyder machine is making about 52 oscillations per minute at 235 degrees amplitude; that is not measured down to the last degree, but that is approximately the oscillations amplitude. The Doughty and Davis machine about 42 oscillations at 180 degrees amplitude; the Jardine machine 59, I think it is, at about 180 degrees amplitude and the defendant's machine 62 to 63 at about 200 degrees amplitude.

The quantities of water in the various tubs are about 16 gallons in the Snyder and in the defendant's tubs. I
336 think the figure is slightly less in the Jardine tub because of a slightly smaller diameter and a larger bulk of impeller and my recollection is that it was about the same in the Doughty and Davis tub as in the others.

Mr. Lane: Did you measure those or is that just a rough estimate?

A. I did not measure them at the moment. We measured in the water the other day on two tubs and it looked about the same amount as it was the other day.

Mr. Bristol: Mr. Papworth can give us the gallonage, I do not care to put him on the stand but if you will just state the amount of water in the Snyder machine.

Mr. Papworth: There is 16 gallons in Snyder, there is 21 gallons in Doughty and Davis, 16 gallons in Jardine and 16 gallons in AW-19.

Mr. Bristol: Now, if the Court please, we are getting ready for the next stage of these demonstrations and when we begin that I would like to run them through until we finish with these four machines. It seems to be now five o'clock and since we would probably have to adjourn before an evening session my suggestion would be that we adjourn now and resume when you are ready to resume.

337 Mr. Lane: Could I interrogate the witness, just to cross-examine with respect to these particular operations while they are going on so they won't have to put them all back again?

Mr. Bristol: I would welcome that suggestion.

The Court: All right, you may do it right now then.

Cross-Examination.

By Mr. Lane:

Q. Now, in the Snyder machine as thus operated, do you see any contact of the impeller blades with the bandana handkerchief? A. Yes, sir.

Q. To what extent is there actual contact in that machine?
A. What do you mean by extent, Mr. Lane?
Q. I mean to say is there any substantial contact with the impeller blades as that machine is operating there?
A. There is sufficient contact to cause the bandana to be dragged around from 90 to 180 degrees, when it is caught by a blade against the resistance of the water that tends to hold it back and to stretch it out as it goes through the water. If one's hand is just put down and held lightly, that is without any stiffness at all, the blade strikes the hand with material force and insofar as that can be considered a measure of the force with which it hits a somewhat lighter article, I
338 would say that there is quite material contact with the handkerchief.
Q. Are you sure that is not the water action that is pushing that off before it actually strikes the impeller?
A. Quite; no water action could drag that handkerchief 90 to 180 degrees around the periphery, as it is dragged when the blade engages it.
Q. I have not seen it go around 90 to 180 degrees. Will you tell me when it does it now.
A. Yes. There (indicating). It has gone around 180 degrees just after you spoke; there it went again about 90 degrees that time and back again.
Q. And you think the water action cannot do that?
A. I know it cannot.
Q. Now, in that Doughty and Davis machine — you do not notice any tags coming off from that bandana in the Snyder machine do you? A. Any what?
Q. Any tag ends or strings loose from the action of that machine; it has been running about fifteen or twenty minutes?
A. That's right. No, I don't see any.
Q. Now, look at the next machine. Do you see any contacts of the device that comes down and rolls it over the impeller? A. Yes, it is quite apparent.
Q. Do you note the strings that are loose there that
339 have been torn off in the operation? A. No.
Q. Will you look at it?
A. I see the string but not strings that have been torn off in that operation.
Q. Why do you say that?
A. Because we have had threads on various of these occasions and I left them on in order that it might be seen that the water currents were not streaming rapidly along the handkerchief, and if you will look at that handkerchief you will see that there is no streaming in there at all. I can change the hankerchief, if you like, and show you the same thing.

Q. Where is the string in the one in the Snyder machine?
A. There isn't any string in there.
Q. Why didn't you put one in there?
A. I will change it.
Q. Never mind, I just wondered why you didn't?
A. (Witness takes handerchief out of Davis and Doughty machine and puts it in Snyder machine).
Q. You spoiled the purpose of that. I wish you would set it back.
A. I would like—
Q. Will you please move that back to where it was
340 so I can ask you the questions about it.
A. Yes, I will in a minute. I would like to call attention to the fact that the string is behaving just the same in here except for the slightly greater violence, as it did in the other machine. Now, I will move them back. (Witness takes bandana handkerchief from Snyder machine and replaces it in Doughty and Davis machine.)
Q. In the Doughty and Davis machine I notice there are two blades left off of the top of the rub board. What is the purpose of that, if you know?
A. In order to make the current somewhat eccentric in the machine so that instead of being thrown up equally all around the periphery and coming down on to the center of the impeller they shall come down a little off center and thus prevent the fabric from matting down on the impeller, and a large fabric such as sheets, which happens with low center post impellers.
Q. How do you account for the fact that there is so little disturbance in the water at the top of the Doughty and Davis model as you have here, as you call it?
A. Because the water in the Doughty and Davis is not being agitated as greatly as it is in the Snyder machine.
Q. What would be the effect of operating that at a more rapid rate of speed?
341 A. There would be a greater rapidity of the water; there would be a greater number of circuits of the handkerchief per minute.
Q. Now in the Jardine machine is there anything in the Jardine patent to indicate the operation at any such speed as you are now showing that, 59 oscillations?
A. There is some indication I would say that there was in the Snyder patent.
Q. I say you take the Jardine patent and point out anything in that patent that indicates the slightest speed of operation from the description of it, and I want you to limit yourself to description?

A. At page 1, line 26 is a statement "My invention relates to machines employed in the cleansing of linen, cambric and other similar materials" and so forth and goes on with the description of the type of washing machine to which it refers, and similar reference in different words to washing machines of existing types is made in Claims 1 and 2 of existing types of washing machines, notably for instance, the Runkle machine which is very similar—

Q. I am asking you to limit yourself, will you, to the description of the patent?

A. That is just what I am doing.

342 Q. I don't care to have you ramble all over the thing; I want you to tell me what in that patent tells anything about the operation of Jardine as to speed?

A. That is precisely what I am doing.

Q. That is what I want. Now, will you point that out?

A. Yes, I started to do so. The description here is of washing machines generally, a machine of such type as described in the Runkle patent and therein it is described in the first claim about half the way down that that particular apparatus, which is similar in its general get-up to the Jardine except the detail of the center, is a machine for washing clothes quickly and thoroughly and without injuring them, and in the opposite column the statement with respect to rate of motion, that the water is in violent agitation and in violent commotion and that is a term that describes a washing machine of the type of machine to which Jardine brought a specific improvement.

Q. Do you mean to say that anybody ever having made a machine like that Runkle patent to which he refers—isn't he referring generally to things that are being made, not some old patent that you dug out?

A. Is it your idea that I said he referred to Runkle?

Q. Yes.

343 A. I didn't say that. I said that he referred to the washing machine art generally as an established thing as of that date, and that Runkle was a part of it.

Q. I am asking you if you know of any washing machine that was made like the Runkle patent anywhere at any time?

A. I don't know as of that date. I know of washing machines that are presently made that are similar to Runkle, in so far as the kind of impeller and the operation of the machine are concerned.

Q. Well, in 1891 at the time Mr. Jardine spoke or Miss Jardine spoke, do you know of any other machine in existence that operated as the Runkle operates?

A. I have no knowledge of washing machines specifically and personally as of 1891.

Q. So you don't know that any machines of that type were made at that time, do you? A. No.

Q. Now, is that the only reference you can find in the Jardine patent about any question of the speed of operation?

A. The general reference in the Jardine patent and the only one that I find that bears on speed of operation is the statement that it refers to washing machines generally.

Q. In what line is that?

A. That is in line 25: "My invention relates to ma-
344 chines employed in the cleansing of linen, cambric and other similar materials." Jardine states that she is making a specific improvement on any machine of that general class which has an impeller of this type, to which the device for preventing catching underneath would be applicable.

Q. So if I understand you correctly the only reference to speed of operation of the Jardine patent is contained in the words in line 25, following 25 "My invention relates to machines employed in the cleansing of linens and so forth"?

A. That is right, and in the implications that are to be read from that line.

Q. Those implications you read from your present day knowledge of the washing machine art, do you?

A. I read from the patents for similar structures.

Q. In the Runkle patent which you refer to, the dolly was not oscillated but went around in complete revolution and that was all, wasn't it?

A. That's right and in the Jardine patent a complete revolution is given as an alternative method of operation.

Q. It is given as a direct method as well as an alternative, isn't it?

A. I don't know what your distinction is.

Q. What was known as the dolly type machine at the
345 time the Jardine patent was taken out, if you know?

Mr. Bristol: If your Honor please, I yielded to Mr. Lane for purposes of cross-examination with respect to this operation.

Mr. Lane: Perhaps I should not go ahead with that. I will withdraw that. I beg your pardon, I got interested in the other phase of it.

Q. How does the speed of water in the machine of the Snyder glass tub, as you call it, and in the defendant's machine, compare?

A. I should say that they were about the same.

Q. How does the roll-over of the bandana in the two machines compare so far as speed is concerned?

A. I should say they were about the same.
Q. You say the speed of the Snyder is about 52?
A. Yes.

Mr. Bristol: Will you add "oscillations per minute" please, because he has just been asking you about speed of water.

A. At 235 degrees amplitude of oscillations.
Q. And the speed of the defendant's is as operated now in the glass tub about 62 or 63 you say?
A. At about 200 degrees amplitude of oscillation.
Q. "Yes" is the first part of the answer then?
346. A. That is correct.
Q. Isn't it apparent that in the operation of Jardine machines that even with a single piece of material in it that it is rubbing against the sides of the projecting members or was on the interior of the tub?
A. What do you mean by rubbing? Touching?
Q. I mean hitting them?
A. It is touching the sides just as it touches the sides in all of the machines,—in the same way, precisely.
Q. What do you mean by touching as compared with any other term you use?
A. I mean what we can see before us here, that the handkerchief comes against the wall in all of the machines, moves up against the wall, with no particular deformation and leaves it and follows the current of water and comes down again into the machine.
Q. Is that as much disturbance of water as you can get with the reconstructed Jardine device?

Mr. Bristol: I object to the question on the ground that it assumes something that the witness has not testified to.

Mr. Lane: He has testified himself that the motor on the thing was not shown there and the thing was not made of the same dimensions.

347 The Court: Overruled.

Q. Go ahead.
A. Well, that is the disturbance of water that occurs in that device as it is operated. I do not understand—I have made no endeavor to get disturbance or anything else. The machine is operating, there is the water, as can be seen.
Q. Have you ever tried to operate that at faster or lower speeds?
A. I have operated it at lower speeds.
Q. Does that decrease the water agitation?

A. Yes, it increases the rate of movement of the water, yes.

Q. You mean by decreasing the speed it increases the water movement? That is what I asked you?

A. I didn't say that.

Q. I thought your answer yes indicated that but what I wanted to know, if you decrease the speed of the dolly you decrease the movement of the water?

A. More or less proportionately, yes.

Q. Did you notice that in the Jardine patent the device that is operating on the interior of the tub there before you is called a dolly at least seventeen times? A. What?

Q. Is called a dolly at least seventeen times?

348 A. That there are seventeen mentions of that as a dolly in the Jardine patent?

Q. Yes, did you notice that?

A. I haven't noticed the seventeen, no. I see two.

Q. May I call attention to another thing in this machine before us. In the Jardine patent there is no mechanism shown under the tub for operating the machine and, indeed, it is shown to be intended to be operated from the top, isn't it?

A. No.

Q. What is the disclosure that makes any statement to the contrary?

A. There is no disclosure as to the method of drive.

Q. As shown in the patent drawing it must be driven from the top, mustn't it?

A. Yes; this particular apparatus would be driven from the top as shown in the patent drawing but there is no prescription as to method of drive, and similar apparatus has been driven before this, bottom driven and top driven,—both methods.

Q. Not in any that you know of that were actually used prior to 1891, were there?

A. So far as published descriptions are concerned that is true.

Q. I am talking about you?

349 A. I said I did not know, of my own knowledge, of the uses around or prior to 1891.

Q. Why didn't you make that machine and operate it from the top as is clearly indicated in the patent drawing it should be operated?

A. It is not clearly indicated in the patent drawing that it should be thus operated and that is the reason I did not make it in that way.

Q. Is there any provision for extending a shaft through the bottom of the tub in that Jardine disclosure?

A. There is just as much disclosure for extending it through the bottom as through the top.

Q. As a matter of fact, it is pivotally mounted on a structure, isn't it?

A. It is [diagramtically] shown to be mounted in a way that nobody who knew anything about making a machine would mount it, in all probability. It has got a little button down there that is mechanically bad. The drive of it is purely diagramatically shown.

Q. At any rate, there is no such mounting of the impeller as you have in the Jardine machine that is before us, is that right?

A. That is right. I said this was a chassis from a modern machine.

350 Q. Have you got in that machine the spring arrangements for use on the sides to keep the clothes from getting between the tub and the impeller? A. No.

Q. That is all this patent is directed to, isn't it?

A. This patent is directed specifically to the application of that mechanism to then well known washing machines.

Q. Why did Jardine put that in when we do not see any of the clothes getting down under there in the operation that you have there before you?

A. I am sure I do not know that.

(Thereupon Court stood at recess until seven o'clock P.M.)

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351 November 30, 1937, 7:00 P. M.

(Pursuant to recess, court reconvened in the Doric Room of Hotel Baltimore, Kansas City, Missouri, Tuesday, November 30, 1937, at 7:00 P. M., parties appearing as before.)

The Court: You may proceed with the trial of the case, Gentlemen.

ARTHUR F. TAGGART, resumed the stand for further

Direct Examination.

By Mr. Bristol:

Q. Professor, will you please explain and demonstrate the action of these four machines when additional clothes are added, and for that purpose will you have each machine loaded with three and a half pounds of clothes?

(The four machines were started in operation and loaded with clothes.)

A. There are now three and a half pounds of fabrics in each of the four machines and the machines are operating. Each load is made up of tea towels, bath towels, a pillow-case, and a red bandana kandkerchief. If we look first at the Snyder machine and particularly look at the top of it—would Your Honor care to look?—we see that the fabrics are distributed pretty much around the edges of the tub on examining the surface, and that they form what might be called a doughnut shaped roll around the edge, that they are appearing up the sides of the tub and moving
352 across the top inwardly to what might be called the hole in the doughnut and disappearing down the sides of that hole. It is apparent at the top that the addition of the clothes has considerably decreased the velocity of movement of water at the top, that there are many fewer of the valleys in the surface that indicate a meeting of the currents. Occasionally, the fabrics swish rather vigorously and splash the water, and the reason for that vigorous swishing will become apparent as we look at the side of the tub, because there we can see that it conincides with definite grasping of the load by the blades of the impeller with a corresponding vigorous [switch] of the fabrics that sets up the additional disturbance of the water at the top of the tub.

Now, if we turn to the Doughty-Davis machine it is apparent that precisely the same kind of action of the fabric is taking place, that they have formed a doughnut shaped roll in the machine and they are coming up the sides and across the top and down the inner side of the roll, and if the eye is fastened on a piece of fabric, any particular piece or any particular color, its path can be readily traced; for instance, the bandana handkerchief appears at the top and disappears; the purple towel is just coming up the sides, going over the top, and now has disappeared substantially down the inside, coming up again on the outside. It apparently is long enough so that it has not completely disappeared down the center before it begins to appear again on
353 the outside.

Looking now at the top of the Jardine machine it can be seen that the distribution of the fabrics in it is the same as it was in the other two machines except that here the center post of the impeller takes the place of the hole in the doughnut, but the fabrics can be seen coming up the side, across the top, and down along the center post, so that the motion of the fabrics, insofar as we can see them nearest the top is the same as in the other machines.

In the defendant's machine you see the same thing as in the Jardine machine, where again the center post takes the place of the hole in the doughnut, not quite so completely because it is not so big at the water line as the Jardine impeller, but we have the same action of the water coming up outside, across the top and in to the post, and down.

Now, if we look at the machines from the side we can see in part the outward and the upward path of the fabric along the side of the tub. Take, for instance, any particular piece, as the blue bath towel, it comes out and up and disappears. The red bandana came out and up. Here it comes again. The rate of circulation of the clothes now is lessened by comparison to what it was with a lighter load. Looking underneath this you can see that the fabrics are definitely resting on the impeller as they move out at the bottom, and those resting are caught by the blades
354 of the impeller swished back and forth in the water. This is a sort of whiplash action that can be seen at about the bottom of the vertical wall of the tub and thence on up to the surface of the water is a very effective method of washing clothes. Also the rubbing or scrubbing of the fabrics that, of course, can be definitely seen by looking through the wall, but which can be felt very definitely by putting one's hand in on the blade, is also an effective method of producing thread deformation. The currents of water in the tub itself are pretty well cut down now as can be seen, so that there is not now the deformation of the fabric by the movement of water current that we had more of and that could be seen when we had simply the bandana in the machine. I have just been talking of the Snyder machine.

In the Doughty Davis machine we see the same kind of action of the impeller at the surface, somewhat vigorous because of the fact that the fabrics are not so firmly caught on this lower blade. There is the same kind of scrubbing action. There is a certain amount of the whiplash action, less vigorous because the peripheral speed of the impeller is less.

Now, in the Jardine machine the same kind of [engagment] of the fabric by the impeller and the whiplash action can be seen as in the other machines. Here we have the fabric somewhat crowded by reason [the] the big baffles that pro-

ject into the tub so that the whiplash action can't be
355 transmitted to the surface as readily here. It is working down below. The rubbing is effective not only along the bottom but along the center post of the device, and as I put my hands in (indicating) I can feel the fabrics being rubbed by those blades on the center post, and also very definitely being dragged down to the impeller by the action of the blade.

In the defendant's machine we have this same kind of action, again the dragging by the impeller, hidden somewhat on the side, but if Your Honor will care to look underneath the glass bottom you can see that the swishing of the fabrics off the rim of the impeller is the same kind of thing we saw more clearly in the other machines. That swishing is transmitted to the fabrics above. There is also in this machine, as in the others, rubbing of the fabrics on the impeller. The independent currents of the water are cut down in this machine, as can be traced by the lint to a very great extent. There is some movement, but not very much of it; and that is the same in defendant's machine, in the Jardine machine, and in the Davis machine, and in the Snyder machine.

Mr. Bristol: Now, if the Court please, we shall proceed in just a moment to demonstrate these same four machines with a six-pound load, but in the light of the practice which we followed earlier in this demonstration I would suggest
that Mr. Lane do such cross-examining as he cares
356 to make with respect to what has now been shown.

The Court: Yes, he may.

Cross-Examination.

By Mr. Lane:

Q. I wish you would have about four gallons of water more put in the Snyder machine.

(More water was added to the Snyder machine.)

A. There are now twenty gallons of water in the Snyder machine, the four gallons additional having been added at Mr. Lane's request.

Q. Now, will you put the same amount in the General Electric machine?

A. Will you give me notice as soon as you can, Mr. Lane, when I can take out some of the water as the machine is leaking now.

Q. There are no rims on that machine as it is there to keep the water from going over the rim?

A. No; some of the water is slopping out.

(More water was added to the defendant's machine.)

A. There are now four more gallons of water, making a total of twenty gallons, in the defendant's machine.

Q. That is all right; you can take it out. On the Snyder machine you do not have the rim around the top, do you?

A. That is correct.

Mr. Lane: That is all.

357 Further Direct Examination.

By Mr. Bristol:

Q. Professor Taggart, will you continue and explain and demonstrate the action of these four machines when the load is further increased to six pounds of fabrics?

(More clothes were added to each machine.)

A. There is now six pounds of fabric in each of the machines, an additional two and a half pounds added to make up the six having been composed of pillow cases, tea towels, and bath towels, Turkish towels. The effect of the further addition of fabrics has been to slow down the rate of turnover of the fabrics in all of the tubs and to make the general progress a little less definite and certain than it was before.

In the Maytag [tup] the pieces particularly in the corners will start up and come down. There is a barred piece that did that as I spoke, and then went up. But eventually they go up and move over into the center and after a while appear again off the base of the impeller.

The general appearance of progress is not so definite on the sides of any of the machines as it was before the addition of the extra fabric, but if we look at the tops of the machines it can be seen in all of them that the fabrics move across from the periphera towards the center, and down at the center.

358 The action so far as the direction of the movement of the fabrics is concerned is just the same as it was with the lighter load, but less rapid.

In the Doughty and Davis machine the movement will be less rapid than in the Maytag machine, but just as positive, a fabric here bending rather more from one side across the surface and down the center because of the [excentricity] of the impeller ribs.

In the Jardine machine a very definite travel is seen, this green bath towel, for instance, travels across the top and

down the center, and following it is the red bandana and it is now coming across the top and traveling down the center shaft and out of sight. The purple towel is now coming across the top.

In the defendant's machine the same relatively slow motion is taking place, pieces appearing up the sides, moving across the top, and down, the rate being faster, perhaps, than in either of the other three machines, but being much slower than it was before, otherwise differing in no way from what we saw in them.

Mr. Bristol: Before we proceed to the next demonstration we will offer Mr. Lane an opportunity to cross-examine the witness with the loading with the six pounds.

Cross-Examination.

By Mr. Lane:

Q. I wish you would put nine and a half pounds of clothes in the Doughty and Davis machine, please.

359 A. I will have three and a half pounds more added to that machine.

(More clothes were added to the Doughty and Davis machine.)

A. There are now nine and a half pounds of fabrics in the Doughty and Davis machine, Form 4.

Q. Now, can you take a little over three pounds out of the Snyder machine?

A. How much over did you want us to take it, Mr. Lane?

Q. Just a fraction over; can you do that approximately?

A. We will try to do that. We will take out a Turkish towel, six ounces; another Turkish towel, six ounces; one pillow case, five ounces; another pillow case, five ounces; a tea towel, two ounces; a Turkish towel, six ounces; a tea towel, two ounces; pillow case, five ounces; tea towel, two ounces; tea towel, two ounces; tea towel, two ounces; tea towel, two ounces; a total of forty-five ounces.

Q. How much have you out now?

A. Forty-five ounces. One pillow case, five ounces. That is enough. There have now been taken out of the machine fifty ounces of clothes in total or slightly over three pounds, as requested by Mr. Lane.

Q. Now, will you take a similar amount out of the General Electric machine?

A. Yes. Pillow case, five ounces; Turkish towel, six ounces; Turkish towel, six ounces; Turkish towel, six

360 ounces; pillow case, five ounces; Turkish towel, six ounces; Turkish towel, six ounces; pillow case, five

ounces; tea towel, six ounces. I have now taken fifty-one ounces of fabrics out of the Defendant's machine, as requested by Mr. Lane.

Mr. Lane: That is all.

Further Direct Examination.

By Mr. Bristol:

Q. Professor Taggart, you referred to the baffles in the Jardine machine. Will you please explain and demonstrate the action of that machine when these baffles are not present?

A. (To the attendant) Will you take the baffles out, please?

(The baffles were removed by an attendant.)

A. (To the attendant) Will you please put back the two and a half pounds of fabrics in the Snyder machine and the Defendant's machine you took out, so that we can compare them with the Jardine machine under corresponding conditions of load?

(Clothes were added to the two machines indicated.)

A. The Jardine machine now without baffles shows the same kind of actions as are described for it when it is loaded with three and a half pounds of fabric, a part of the fabrics directly surrounding the rim of the impeller being engaged with the impeller, and where we can see there is an overhanging part of the load on the side, those pieces are being dragged back and forth by the action of the blades.

361 As between the action now and with the baffles in it can be seen that somewhat more of the movement of the fabrics below is transmitted to the load up towards the surface, that is to say, the inch or two of horizontal movement of fabrics that we can see now is not confined between ribs as it was before, and therefore the reciprocatory action of the impeller is transmitted slightly. Also the turnover rate as it is measured will show to be slightly faster than it was with the baffles in, but of no difference in kind at all and not very different in speed. The action across the top is just the same as it was with the ribs in and just the same as it is in defendant's machine, and with the exception of the center post as it is in the Snyder machine except that there isn't as much swishing of the surface of the water being caused by the dragging of the blades on the underlying fabrics in the Jardine machine as in the Snyder machine. The fabrics are not as firmly gripped by the blades in the Jardine machine as in the Snyder machine under these conditions.

Q. Will you please compare the washing action of the Jardine machine with the baffles in place and its washing action without the baffles?

A. The washing action is the same in both cases and comprises two or three, according to how you wish to sort them, different acts of the impeller and water on the clothes. There is rubbing in both cases by the impeller on that part of
362 the load that is in direct contact with the blades. The blades move under that part of the load and with the weight of the overlying fabric against them do the same kind of work as is done on the ordinary wash board. Then there is the action that results from engagement of the fabrics by the impeller, a reversal of direction of the fabric that sends a wave of strain through the fabric as it is dragged through the water that compresses along the wave each thread and squeezes out the water that is in it with its dirt and then releases and permits the cleaner surrounding water to flush back in. That action is transmitted to fabrics that are not directly in contact with the blades, as can be seen in the tub. Here is a piece of fabric, this yellow towel, that seems to be getting a certain amount of this folding-opening, folding-opening motion, although that piece is being engaged really by an under part that is in contact with the impeller. The motion of the line in the water shows that there are confused slow currents in there, but there is no reflection in the corresponding movement of the fabric of that motion.

Q. Professor, can you have another three and a half pounds added to the Snyder machine so as to make its load comparable with that of the Doughty and Davis load now?

A. Yes, sir.

Mr. Bristol: But before you do that, will Mr. Lane cross-examine now on the demonstration which has just been made?

Mr. Lane: Yes.

363 Cross-Examination.

By Mr. Lane:

Q. What is the earliest date you ever knew of an electric or power washing machine for family use?

A. Your definition of the word "know"—do you mean of my own personal knowledge?

Q. That is what I want to know.

A. Well, I can tell you that I think perhaps the first one I owned was in 1922, and that at least so far as definite knowledge is concerned is perhaps as far back as I know of my own knowledge.

Q. Do you know from the literature previous to 1908 that machines were operated by motor?

A. So far as a specific question like that is confined to electric motors I can't recall offhand. There were plenty of power-driven machines prior to that date.

Q. Where they were connected with belt or something like that? A. Yes.

Q. But not a self-contained machine?

A. That I wouldn't say.

Q. You do not know of any?

A. I wouldn't say that there weren't without looking at the patents.

Q. You do not know of any machine actually commercially made prior to 1908 with a motor connected to the machine, do you? 1908 or 1909?

A. I told you that so far as my personal knowledge is concerned it starts, probably, as of 1922.

Q. I can see nothing in the Jardine patent that would
364 indicate the use of power in any way. Can you slow down the Jardine machine and operate it by hand with that apparatus you have there?

A. No. Was your remark about the use of power supposed to be a question or merely a statement?

Q. A statement. I just asked you if you could slow it down.

A. No, I cannot. I have operated it at the lower speed, however, and found that there was no difference in kind at all as between the Doughty and Davis and the Snyder, for instance; the turnover with lower speed is the same kind.

Q. As a matter of fact, there is substantially little turnover?

A. That is right. The turnover in the Snyder machine amounts to about one foot of travel per minute of the tracer cloth.

Q. You consider it very slow travel of the clothes?

A. I consider it one foot per minute.

Q. Isn't that slow operation?

A. I don't know what you are comparing it to.

Q. Do you consider that a free rollover with clothes?

A. I wouldn't know what you mean by "free". If you mean I considered it a rollover without touching anything, I would n't.

Q. What do you mean by free rollover?

A. I do not use the term particularly.

Mr. Lane: That is all.

365 Further Direct Examination.

By Mr. Bristol:

Q. Will you please put in three and a half pounds more into the Snyder machine so it can be compared with the Doughty and Davis machine loaded?

Mr. Lane: You might do the same thing with the Jardine at the same time.

A. (To the attendant) Please take those clothes there and take enough out of the defendant's machine to make three and a half pounds.

(Clothes were taken out of the defendant's machine, added to others, and put in the Snyder machine.)

Q. We have taken a shirt, six ounces; another shirt, six ounces; four tea towels, of two ounces each, eight ounces; a pillow case, five ounces; and a Turkish towel, six ounces, and put with enough other fabrics to make fifty-five ounces. I have now put fifty-five additional ounces of clothes into the Snyder machine making a total of practically nine and one-half pounds of fabrics in that machine.

366 The action of the fabrics insofar as the swishing by the impeller is concerned, is apparently about the same as it was before with the 6 pounds. There tends to be rather more swishing of the whole load transmitted to the surface so that the surfaces of the Snyder tub and the Jardine tub look very much alike with fabrics projecting up and through the surface of the water in the tub and a part at the center obviously reciprocating with the impeller because the load is raising directly on the impeller under the impulse which is being carried up through the clothes.

Q. You used the term Jardine. Were you referring to the Doughty and Davis machine?

A. I was. There is not any immediate and ready evidence of turn-over in the machines although I note at the moment that a handkerchief, a bandana handkerchief that was in the corner of the Snyder machine resting on the impeller a couple of minutes or more ago when I started to talk about the machines has now come up to the top and is slowly moving into the load, not fully over to the center but about half way in toward center and has now disappeared. I would not expect to get, from the solidity of the central mass in the Doughty machine, quite such quick turn-over.

Mr. Lane: That was two minutes and a half you said?

367 The Witness: I guessed two minutes.

From the sides of the machine the behavior of the fabrics in the two appears quite similar. The Snyder machine rather looks as though it were dragging faster at the bottom than the Davis machine but I think that is perhaps because we c.. e right on the rim of the impeller and when

we see through on the Doughty machine the dragging action seems to be about the same.

Cross-Examination.

By Mr. Lane:

Q. Do you think the pressure of the Snyder machine when thus loaded is operating in accordance with what he says is the operation of his machine—as thus loaded?

A. Well, I don't know, Mr. Lane, what he says about loading.

Q. You cannot read that into that with your mind, although you have no trouble about the Jardine, reading from other patents?

A. Well, I could not say that I found any in the Snyder patent about loading. I know that a fabric will wash here up to 8 pounds. I have not tried to wash with 9 pounds. I know that they are going to be washed here and I would suspect from the fact that there is definite turn-over that they will be uniformly washed.

Q. You don't know how long that would take, do you?

A. I know that so far as the range from about 2
368 pounds to 8 pounds in the Snyder machine is concerned that it washes to the same extent, irrespective of the load.

Mr. Bristol: Now, I wish to proceed to another line of demonstration; if Mr. Lane has any further cross-examination about the comparison that has just been made I would be glad to have him do it now.

Mr. Lane: I will have some further cross-examination but I am not going to do it now but of course I will later. I am not precluding myself on this witness.

Further Direct Examination.

By Mr. Bristol:

Q. Mr. Taggart, the Snyder patent in suit states on page 3, beginning at line 29 "For the purpose of exemplifying my invention, the gyrator or impeller is disclosed and described as mounted on the tub for support. Herein it is shown as projecting upwardly through the bottom of the tub, but it must be evident that all desirable arrangements are within the contemplation of this invention, such, for instance, as the mounting of the impeller so as to depend into the liquid from the upper portion of the tub, thereby bringing about the consequent reversal in the flow of the fluid through the tub. Thus, as modified, the flow will be radially outwardly and thence downwardly, and then inwardly and upwardly toward

the center of the gyrator." And further on page 4 be-
369 ginning at line 8, the patent in suit says "While this embodiment illustrates the invention it is to be understood that the gyrator may be located at the top of the tub and in depending position from the top or cover thereof".

Are you prepared to demonstrate the sort of arrangement that is comprehended in those passages of the patent in suit?

A. Yes.

Q. Please identify your apparatus for any demonstration.

Mr. Lane: Perhaps I should call attention to the fact that in the claims in suit we are only concerned with impellers mounted at the bottom of the tub. Each claim is concerned with that type of construction; just for the record.

A. I have here an apparatus comprising a glass sided tub with a center post drive on which can be placed a dish shaped impeller like that that is in the Snyder square tub machine that has been shown and discussed here, adapted, however, to be inverted, so that the blades point downward toward the liquid and fabrics when there are fabrics present, instead of upward.

Mr. Bristol: I offer this apparatus in evidence and ask that it be marked Defendant's Exhibit 18.

Mr. Lane: I object to this as not properly proven to illustrate anything.

370 The Court: Overruled; exception allowed.

(Machine referred to marked Defendant's Exhibit 18 for identification and received in evidence.)

A. I have here the impeller described and have placed it on the spline in the machine so that it now projects on the edge of that disc about a half inch below the surface of the water.

Q. Will you explain and demonstrate the action that takes place in a washing machine with the Snyder impeller located at the top of the tub?

The Witness: (To attendant) Will you start that please.

(Attendant starts machine and red bandana handkerchief placed in machine, Defendant's Exhibit 18).

A. The particular apparatus is now arranged for and is oscillating at 40 or 41 oscillations per minute of about 180 degrees amplitude. As it operates, water is thrown out from the rim of the impeller and the tracer or bandana following the water is thrown out and moved down the side, thence in-

ward and upward to the impeller again and that occurs over and over again, not particularly rapidly on account of the reduced speed of the impulsion but nevertheless following the same kind of path although reversed in direction as between up and down, that the fabric followed in the center machine with bottom position impeller. The handkerchief as it moves around in the currents folds slowly and is to that ex-
371 tent pulled by the water as it comes up under the blades, it is seized by the blades and pulled to one side or the other according to the way in which it is engaging or pulling, being at a very different rate of speed from that at which the handkerchief moves when it is out of contact with the impeller.

Q. Without loading this machine, please explain the character of the action which occurs when it is loaded with other clothes,—with additional fabric?

A. The introduction of further fabric into this apparatus reduces the rate of travel of any particular piece of fabric in precisely the same way that it did in the Snyder machine with the impeller in the bottom but the path of movement of the fabric remain the same as now. There is, with load in, the fabric in contact with the impeller at all times as with the bottom position impeller and those fabrics are scrubbed and dragged and swished through the water and thereby washed just as in these other machines.

Q. Are you familiar with the action of the so-called Miller machines with porcelain tub and floating wooden agitators?

A. Yes.

Q. And can you demonstrate the action of those machines in this same tub? A. Yes.

Q. Please do so but first I ask that a machine which
372 is here in the back of the room be marked for identification Defendant's Exhibit 19.

(Machine referred to marked Defendant's Exhibit 19 for identification.)

Mr. Bristol: I may say, your Honor, that the machine which has just been marked for identification is one which was identified in some of the depositions taken on behalf of the defendant, as a machine which was sold in 1919 and those depositions will be read in evidence at a later time. I ask your indulgence to make these demonstrations, perhaps a little bit out of turn but while we are here.

Q. Mr. Taggart, will you take the impeller or agitator from the machine which has been marked Defendant's Exhibit 19 for identification and demonstrate its operation. Perhaps your Honor would just look at the tub itself and the

assembly of the impeller before we start the demonstration. I will take up the mechanism a little bit later but I would like to have you see the nature of the tub itself and the way in which the agitator is mounted in it.

Now, will you proceed with your demonstration, Professor?

A. I have now placed the impeller taken from the Miller machine into the tub in which the Snyder inverted impeller was placed and it floats on the surface of the water
373 freely and is so arranged that it can travel up or down the shaft as freely, if it tends toward any change in position; the handkerchief that was used in the other demonstration is now lying at the bottom of the tub being slightly heavier than the water and sinking through.

I now start the apparatus. The handkerchief lifts with the water current as it was induced by the impeller and evidences definitely the upper turn. It is caught by the blades of the impeller and swished back and forth a number of times and sometimes that swishing will go on for a considerable length of time because of the fact that the blades are vertical on the inner ends and it don't release the fabric as readily as the curved inner blades of the Snyder. Then the handkerchief releases and travels outward from the periphery of the impeller, down at the sides, up again, down in contact with the impeller and up and continues to do that. When struck by the blades of the impeller it jumps to one side just the same way as it did with the Snyder impeller. The speed here, being in the same apparatus, is the same as it was with the Snyder impeller, 40 oscillations per minute at about 180 degrees oscillations. The impellers [stays] in a fixed position, floating on the surface of the water.

374 Q. Now, Professor Taggart, are you familiar with the action of machines such as are described in the Davis patent, Number 1,240,826? A. Yes.

Q. Are you prepared to demonstrate the action of an agitator such as shown in that patent in this same apparatus?

A. Yes, I am.

Q. Please do so?

A. I have here an impeller that is a reproduction of the impeller of the Davis patent drawing with twelve blades, ten of which are shorter than the other two; all the short blades extending from the periphery toward the center radially, and the two longer ones projecting necessarily nearer the center than the others. The blades are beveled on the inner end as described in the Davis patent.

Mr. Bristol: Now, Professor, before you go ahead, I will ask that the copper tub machine which is present here in the room be marked for identification Defendant's Exhibit 20.

(Machine referred to marked Defendant's Exhibit 20 for identification.)

Q. Will you please compare the impeller which you have just referred to with the impeller contained in this
375 machine, Defendant's Exhibit 20, for identification. I might say, your Honor, that this is a specimen of the 1900 Company's Form 3 washing machine—the particular specimen was sold and delivered on January 1, 1920.

A. The two impellers can be seen now and from visual inspection they are alike except that one of the short blades adjacent,—one of the long blades of the impeller in the Form 3 machine is missing; also that there is no hole in the center of the impeller of the Form 3 machine, while there is one in the impeller that I have, the reason being that I am using a bottom drive in the glass tub, while there is a top drive in the Form 3 machine. With the top drive and lid it is difficult to see down into the apparatus. Furthermore, I did not have a top drive available. The impellers in both cases are arranged loosely on the driving shaft so that they float on the surface of the water but are free to move vertically equally in the two machines if there is anything present that would tend to make them move vertically.

Mr. Bristol: I offer the impeller which the witness has identified in evidence, and ask that it be marked Defendant's Exhibit 21.

(Impeller referred to marked Defendant's Exhibit 21 for identification, and received in evidence.)

376 Q. Now, will you proceed with your demonstration, Professor?

A. I would like to call attention to the fact that this particular impeller is weighted at the top with an amount of metal which approximates as closely as I was able to approximate the weight of the metal that is on top of the impeller in the Form 3 machine, so that the buoyancy of this impeller is the same as the buoyance of the Form 3 impeller. The impeller is now placed on the shaft and is loose vertically.

Mr. Lane: How far down will that go?

The Witness: It will go to the bottom of the tub if there is anything such as the weight of my hand or any other force sufficient to overcome the buoyancy.

(Machine started in motion by witness.)

I have started the impeller, and the handkerchief that was lying on the bottom has risen as it did with the Miller impeller,—come up to the top. It is on the back of the tub now but coming around and is moving in the same way that it did in the Snyder apparatus with the impeller in top position; outward at the top, downward along the wall of the tub; inward toward the center and upward. When it comes to and comes in contact with the impeller it is knocked to one side quickly. If it engages it drags, but again releases,—releases much more readily in this machine than with the Miller apparatus because of the fact already mentioned, that
377 these blades on this impeller are beveled on the inner edge and thus release the fabric readily. The speed now is the same as it was before and likewise the degree of oscillation, namely 40 at about 180 degrees amplitude.

Q. Professor, will you please return to your demonstration of the Miller machine and explain and show what the action of such machine is when fabrics are put into the tub?

A. I have now replaced the impeller of the Miller machine, and will you put in a number of tea towels and bath towels.

(Attendant puts tea and bath towels in machine.)

Mr. Lane: Are you being particular about the weight now?

The Witness: Yes. I am going to try to find out how much it is. 3½ pounds. 3½ pounds has now been put into the machine and with the impeller operating the fabrics are being engaged by the impeller in just the same way as they were with the bottom position impellers, swished back and forth through the water and they turn over slowly, more slowly in general than they do with the bottom position impellers because the impulse of the impeller is not quite so well brought to bear on them, but if you will look at the blue towel, it is gradually working in at the bottom of the load,—down toward and under; it is taking considerable time for it to work at the side. Usually a piece thus started does move up.

378 Mr. Lane: It takes nearly five minutes to get out of sight.

The Witness: I would not think it was five minutes yet. I would say it is a couple of minutes. I have timed these circuits and they will run from one minute to five minutes according to whether they get into a place that moves rapidly or slowly. The turn-over of the load is perfectly certain and definite as is indicated by the fact that if we distribute

a part of the soiled pieces around through the load, fastening them to different pieces of the fabric that they are all cleaned to the same extent, which shows that they have all been brought progressively into the cleaning zone in the machine.

Mr. Lane: Do you load that up to the full capacity that they used with those machines?

The Witness: What do you mean, full capacity?

Mr. Lane: Six or seven pounds.

The Witness: As you increase the load in this machine, as in the other machines, the turn-over rate is slowed down more or less in proportion to the additional load.

Mr. Bristol: Will you delay your cross-examination for just a few minutes and permit me to finish my examination?

Mr. Lane: I thought we were just sitting here and I thought I would just ask a few questions while we were waiting.

379 A. The towel Mr. Lane just inquired about it just disappearing from sight at the back of the machine now.

Mr. Lane: No. It is right over here in good shape.

A. (continuing) It is on the bottom of the tub now, if your Honor would care to look and see the difference in position. Remember, we started at the top and it is now, as you see, down at the bottom of the load.

Mr. Lane: How long did it take this time?

Mr. Kenerson: Four minutes.

A. The handkerchief is moving down here much more rapidly at this time.

By Mr. Bristol:

Q. Now, Professor Taggart, will you point out the top of the tub, with the Miller agitator?

A. There is considerable splashing of the surface of the water, a certain amount of horizontal movement following the movement of the agitator; the fabrics [moves] slowly out from the rim and start down the sides as the red handkerchief has just done while I was talking. The surface disturbance does not go very far below the surface as can be seen by the lint.

Q. How much of the movement of the clothes can be observed in this type of machine with an opaque tub?

A. Not very much. You can catch occasional small pieces that come out quickly enough so that you can trace
380 their passage across this narrow space but the larger pieces do not move across rapidly enough to make it as apparent as it is on the side.

Q. Will you now compare the action of the Miller machine which you have just demonstarted with the action of the machine of the Davis patent?

A. I am removing the Miller impeller and replacing the Davis impeller leaving the load the same in the apparatus as before.

I have now started the impeller. The fabrics now make much more contact with the impeller than they did when there was merely the handkerchief in, just as has been the case in all of the machines that we have seen. The fabrics are caught by the blades of the impeller and swished back and forth through the water. They are thus deformed and washing action thus occurs. There is also scrubbing or rubbing on the under side of the impeller by the passage of the blades over the upper surface of the fabric. There is a slow turnover. The tea towel that I have my finger on is just now disappearing, starting to disappear under the bottom of the load and is moving in the bottom and is now gone.

Another one is moving in at about the same place. It is up again, the upper part of it was engaged by the impeller and the direction reversed. There is, however, a general slow progress of the fabrics in the outward, downward, in-
381 ward, upward direction in the machine.

Q. What speed is this Davis agitator being run at?

A. Forty oscillations per minute, 180 degrees amplitude.

Q. And that is the same speed, is it not, at which you ran the Miller agitator? A. Yes.

Q. And also the Snyder agitator? A. Yes.

Mr. Bristol: I ask that the Snyder top agitator which the witness used be marked and I offer it in evidence in this case as Defendant's Exhibit 22.

(Agitator referred to marked Defendant's Exhibit 22 for identification and offered in evidence.)

Q. Will you describe the action which takes place when such machines as Miller and Davis are loaded further than the loading you have demonstrated?

A. Well, the additional loading crowds the space below the agitator and slows down the movement—the turn-over of the fabrics.

I have loaded both the Form 3 machine and the Miller machine, the Miller porcelain tub machine from which I took the impeller, with 6 pound loads of clothes and tested the washing and found that in both cases the washing was uniform so that the fabrics, although with respect to any particular piece at any moment of movement is more or less irregular as we see before us, there is nevertheless a
382 general progress of the load outward, downward, inward and upward so that each part of the fabric is brought in contact with the blades of the impeller and washed.

Mr. Bristol: That concludes the demonstration of this apparatus and I shall be glad to have Mr. Lane cross-examine on that.

Cross-Examination.

By Mr. Lane:

Q. I should like to have you put 8 pounds of clothes in that machine of so-called Davis construction.

A. Let's see. We have 3 1-2 pounds in here. We want 4 1-2 pounds of fabric.

The Attendant: We have 1/2 by 5 in the 9 1/2 pound load.

The Witness: I would rather know what is in there.

The attendant: 6 ounces, 6 ounces, 5 ounces, 2 ounces 2 ounces, 5 ounces, 2, 6, 2, 2, 6, 6.

The Witness: I want 7 more if you have got a 5 and a 2 there.

The Attendant: 6 and 1.

Q. Put in another pound, will you?

The Attendant: 6, 6, 2, 4. That goes to the water line.

Q. How much have you got in there now, of your weight?

A. There are now 9 pounds of fabric in the machine
383 at Mr. Lane's request.

Q. Now, put that rub board on there and see what happens.

(Attendant puts rub board on machine).

A. Now, we will see what happens (witness turns power on the machine). I have now the 9 pounds of fabric in the machine and the oscillator running, the fabric appears to be engaging the impeller at the top, just as it did in the Maytag machine with a heavy load.

Q. Will you answer the question relative to what the machine does as distinguished from—

A. (Continuing) And is being twisted back and forth, the pieces of fabric and whipped, just as has been the case with other machines and this machine at lighter loads. The bottom part of the fabric is having the motion of the impeller transmitted to it through the medium of the intervening fabrics as has occurred before with heavy loads.

Q. I notice with the heavy load the fabrics are compressed down at the bottom and it is moved slowly back and forth over the bottom, is that true?

A. If yo Honor would like to come here you will see that the stuff which Mr. Lane refers to is compressed in one place and is quite absent in another, that the load is light at the side of the machine; it is compressed in other places
384 and by reason of this compression the turn-over rate, if turn-over occurs, will be slow. There would tend, I expect, to be turn-over more or less at the top of the load extending down as far as the load is semi-afloat and the bottom part of the load would be definitely inactive by comparison with the other part.

Q. In that machine there are no corrugations in the bottom or sides as shown in the Miller machine from which you took the Miller model, is there?

A. There are no corrugations on the bottom; there were on the bottom of the Miller machine; there are no corrugations on the side; there were none on the side of the Miller machine.

Q. Are there any corrugations that correspond at all to those on the Davis machine from which we took the impeller?

A. There are no corrugations in the bottom of the glass tub, as I stated. There are very slight corrugations on the bottom of the Davis tub.

Q. Well, in the Form 2 machine which is over there, the wooden tub with the corrugations all around—will you look at the Miller machine while you are down here and see whether there are corrugations on the interior of that machine at the right?

A. Yes, there are.

Q. And on the other one they are on the bottom?

A. There are corrugations at the sides and at the bot-
385 tom of one of the Miller tubs; not the one about which you inquired in the first place. There are corrugations on the bottom of the tub only concerning which you queried.

Q. On the Davis exhibit 2 A which has not been marked yet, that is corrugated throughout the interior, isn't it?

A. What do you mean?

Q. The one that is kind of messed up, tied up with strings, almost?

A. You mean the wooden one?

Q. That's it?

A. There are corrugations on the side and bottom of the wooden tub.

Q. There is nothing that corresponds to that in this machine you are operating here, is there?

A. No, sir.

Q. Now do you think that the Miller machine and the Davis machine operate in substantially the same way?

A. Yes. The only difference in their operation, so far as I can see is that on the Miller impeller that we use the blades are slightly deeper—are deeper than they are on the Davis impeller and they are vertical on the inner edge and consequently they do not release the fabrics as readily as do the Davis blades. For that reason the rate of turn-over of the fabric mass is slower but each piece of fabric that comes to the impeller is there for a longer time so that the net
386 result is the same.

Q. Do you think that the clothes in the bottom of that tub that is there operated are getting any substantial washing in the bottom of the tub?

A. No, they never would unless they would turn over.

Q. That same thing would be true if you used the Miller mechanism in the tub, wouldn't it?

A. Yes, and if I had corrugations on the bottom they still would not get washed to any appreciable extent.

Q. They would get washed more than it does here?

A. Unless they come up to the top and come in contact—This is the impeller that does the washing.

Q. It would get washed more than it is now?

A. That is not my experience. I tested the corrugated Miller tub against the other Miller tub and found that the washing was substantially the same in both tubs. What little advantage there was as between the two tubs was in favor of the smooth tub.

Q. That dolly that you put in there was in a very dry condition when you put it in, wasn't it?

A. We have been operating it the last three or four days since we have been here.

Q. I asked you whether it was dry or not?

387 A. I am giving you all the facts at my disposal in order that you may judge.

Q. Was it dry when you put it in?

A. I don't think it was very dry.

Q. All right. Was the Miller one dry or not? You need not bother about explanations; just say whether it was?

A. I don't think it was very dry.

Q. Is that machine operating in the manner which Miller says in his patent he contemplated operating machines, in your judgment?

A. I have not read the Miller patent—

Mr. Bristol: Object.

A. I am sorry.

Q. Is that machine now operating in the manner in which you think that Davis contemplates in his patent?

A. No. I should not think so at all.

Mr. Lane: That is all for now.

Further Direct Examination.

By Mr. Bristol:

Q. Please explain the mode or the manner of operation contemplated by Mr. Davis in his patent?

A. He explains that the water and the fabrics shall travel outwardly from under the impeller, down along the side, inward at the bottom and upward again to the impeller, as he says in the form of an elongated loop. These fabrics
388 run very slowly, if at all, and therefore I would not say that the apparatus was now performing as the patent describes.

Q. Did the apparatus perform as described in the Davis patent in any of your previous demonstration before Mr. Lane asked you to put in this huge load?

A. Yes, I think so.

Cross-Examination.

By Mr. Lane:

Q. Will you point out in your Davis patent where Mr. Davis says anything about the clothes going around in the tub? I would like to have you point that out?

A. I don't find that he says that. He defines that the water will thus flow under the action of the impeller; that is we saw that the fabric similarly flowed when water thus flowed.

Q. Then your statement as to what Davis said is erroneous?

A. I would say that the statement that the fabric thus traveled was in error.

Mr. Lane: That will be all for this demonstration.

Further [Direction] Examination.

By Mr. Bristol:

Q. Now, Mr. Taggart what is the effect of the action on agitator machines with the agitator located either at the bot-

tom or top of the tub of varying speeds of oscillations
389 of the agitator?

A. It slows down the rate of circulation of water and of fabrics. It slows down the rate of washing when the impeller is slowed down as compared with any given faster rate.

Q. Are you prepared to demonstrate the effect of varying the speed in a bottom agitator machine?

A. Yes.

Q. Please identify the machine?

A. I have here a General Electric apparatus, Model AW-19 with glass tub and fitted electrically for variable speed operations.

Mr. Bristol: I ask that this machine be received in evidence as Defendant's Exhibit 23.

(Machine referred to marked Defendant's Exhibit 23 for identification and received in evidence).

Q. Now, will you please demonstrate the effect of varying the speed of oscillation?

The Witness: (To attendant) Start it at slow speed.

(Attendant complies).

A. The impeller is now oscillating about 26—180 degree oscillations per minute.

Mr. Lane: About the rate of the old peg dolly, wasn't it?

Mr. Bristol: Won't you just let him go ahead with his direct examination, Mr. Lane, and bring out your mat-
390 ters in cross-examination, if you have any.

A. I now have a bandana handkerchief in the tub and it is made apparent by the handkerchief that the currents in the machine are flowing outwardly from the impeller at the bottom and upwardly along the side, inwardly toward the impeller and down and that there is at this speed, as at the higher speed also a smaller eddy about half way up the tub so that a part of the time the handkerchief goes only half way up and turns down, turns over without actually getting into the impeller.

As the handkerchief thus turns over it is folded slowly, crumpled, manipulated, and insofar as that crumpling is effective to distort the threads of the fabric there will be a certain amount of washing thereby. When the fabric strikes the blades of the impeller at the bottom it is moved by them, brought up to speed but at this slow speed there is relatively little such engagement.

The Witness: (To attendant) Turn up the speed.

(Attendant complies)

A. The impeller is making about 35-180 degrees oscillations at the present time. The movement of the handkerchief is the same kind of movement that it was before except that it tends to come out a little faster, go up a little higher, come in, in general a little further from the impeller and to be struck by the blades of the impeller a little more often and when it is struck to be swept along a little bit further. There is no difference at all except that the things that I described before take place a little faster.

391

The Witness: (To attendant) Will you go up again, please?

(Attendant complies)

A. It is about 44 oscillations per minute now and exactly the same things that were described before are taking place except that the handkerchief is swept around a little bit further when it engages the blades than it was before and that its movement in response to the currents is faster because the currents themselves are faster. There is now beginning to be a surface appearance of some valleys indicating the meeting currents.

The Witness: (To attendant) Speed it up again.

(Attendant complies).

A. The rate now is 56 oscillations per minute which is very close to that at which the other General Electric machine was operating, and as far as I am able to see now and remember over, that looks like the same. I know, of course, that with a little faster speed everything will be moving a little faster but I am getting fairly rapid turn-over of the handkerchief.

Mr. Lane: I thought you said the other was 63 or 64.

A. I did.

And it makes more circuits per minute than it did before. There is more of an appearance of meeting currents at the surface; no appearance in the way of crumpling of the fabric but those meeting currents extend below the surface in their effectiveness.

392

Mr. Bristol: Now, if your Honor please, before I proceed to ask Professor Taggart to put some load in that

machine I would like to extend to Mr. Lane the privilege of cross examining on this particular phase.

Mr. Lane: There is nothing I care to ask about now.

The Court: You will have considerable further demonstrations, will you?

Mr. Bristol: I have several more.

The Court: I mean it will take an hour or several hours?

Mr. Bristol: I do not think it will take several hours; it would take probably a couple of hours.

The Court: Then we shall not proceed further this evening.

Mr. Bristol: Before you rule finally, it will take just a few moments to make the demonstration on this machine, if I may have your indulgence.

The Court: Certainly.

Q. Will you explain and demonstrate the effect of varying the speed of oscillation with some load of clothes
393 in this machine, Professor?

The Witness: (To attendant) We will go down to about 30.

(Attendant complies).

A. It is about 29 now. All right, put in 3½ pounds of clothes.

(Attendant complies).

Mr. Lane: Are you changing the speed?

A. I am going to bring it to 29 or 30 again.

Mr. Lane: After the load goes in?

A. To bring it back to what it was with the tracer before the load went in, yes. I have 27 to 28 oscillations per minute now. It is quite apparent that the rate of the turn-over of the fabric has been materially changed, lessened and yet, by fastening one's eye on the handkerchief he sees it started down the center post and it will come over. There it goes and looking at the top here it can be seen there is a slow but perfectly definite traversing of the fabric across and into the impeller, down at the center but it is very slow as is to be expected with the slow rate of revolution. Now, if I increase the revolution rate—

Mr. Lane: You would hardly consider that a practical thing for washing operations?

Mr. Bristol: Will you hold that, please.

394 Mr. Lane: I thought he was going to increase the speed. I wanted to ask him about it at that rate. That was all.

(Attendant increases speed).

A. I am now oscillating at 40 per minute and have a much more definite travel of fabric across the surface, nicely regular from all sides, one piece after another of the figured fabrics come across the top and disappear.

The Witness: (To attendant) Now will you give it a little more.

(Attendant complies).

A. Now, you have more speed but the effect of the speed so far as the travel of clothes is concerned is merely to increase the rate without in any way increasing the path or changing the path.

Mr. Bristol: That is all. You may cross-examine, Mr. Lane, as to this phase.

Cross-Examination.

By Mr. Lane:

Q. Do you think, Mr. Taggart, that the machine operating at 29 oscillations would be satisfactory in the washing of clothes in the ordinary household?

A. Well, I have operated at 32 oscillations and got uniform washing, slower than I get at a greater rate.

395 If I go up to 40 it has faster turn-over, faster washing. If I go up to 50 it is faster washing again. Naturally it would be because there is more vigorous weaving of the fabrics through the water, more vigorous scrubbing and consequently faster washing.

Q. When you operate at 36 or 40 you get a very slow washing operation compared with the action where it operates at 65, don't you?

A. Well, I think I got about half the rate.

Mr. Lane: I think that is all for this evening.

The Court: We will adjourn and reconvene here at 9:30 tomorrow morning.

(Thereupon Court stood at recess until 9:30 Wednesday, December 1st, 1937, at the Doric Room at the Hotel Baltimore in Kansas City, Missouri).

396 Wednesday, December 1, 1937.
9:30 A.M.

(Pursuant to recess Court reconvened in the Doric Room at the Hotel Baltimore and the trial resumed).

The Court: Call your next witness, Mr. Bristol or resume with the witness who was on the stand.

ARTHUR F. TAGGART, Resumed the stand and further testified as follows:

Further Direct Examination.

By Mr. Bristol:

Q. Professor Taggart, referring to the Snyder patent in suit, page 1, lines 33 to 49 I call your attention to the statement there as follows: "These and the other objects of the invention are attained by so constructing and associating the tub and the gyrator of the washing machine, and so operating the gyrator that the weight of the articles does not interfere with the gyrator, or its action, or with the tub and its co-action with the gyrator. In my invention the gyrator and tub, irrespective of the upper or lower end position of the gyrator therein, so coact that the goods to be cleansed are not only given a definite washing and cleansing movement, but are also maintained, during such movement, in a suspended condition in the liquid, so that the rapid and energetic alternating rotary movements of the gyrator do not interfere with the goods." Does this
397 statement as to interference between the gyrator and the goods coincide with your observation of the machine shown and described in the Snyder patent?

Mr. Lane: Objected to as leading.

The Court: Overruled.

A. No.

(Snyder machine turned on in motion by attendant).

The Snyder machine now contains about 16 gallons of water and is operating with the power line running through an Ammeter that records the power being consumed. The Ammeter's needle is now oscillating—

Q. Watt meter, please.

A. The watt meter is now oscillating at about 260 watts and with the agitator working freely in the water. I am going to ask Mr. Papworth to put his hand on the oscillator and exert some force against the oscillator so as to show that when the blades of the oscillator or impeller are inter-

fered with that there is a reflection of that interference in the power readings.

(Attendant does as requested).

By such interference the reading is run up to 300, 350 watts with an occasional jump to 400.

(Operator takes his hand out of machine).

Now, as the motor has warmed up a little bit the
398 regular readings have dropped to about 250 or slightly over. I will ask Mr. Papworth now to put a sheet in the machine.

(Attendant complies).

Q. Professor, would you let us know what the weight of this sheet is before it goes in?

The Witness: Is it marked there, Mr. Papworth?

The Operator: One pound 12 ounces.

A. One pound 12 ounces. All right. Now, as that is dropped in there is no change at first but as it sinks and is caught by the agitator the reading rises to 290, 300, 310; it is now oscillating on about 310 with occasional jumps; 320, 330, 340, 350 and has settled down to a point around 340, 350 on the meter indicating very material interference of the 20 ounce piece with the agitator.

Q. One pound 12 ounces is how much? A. 28.

(Machine turned off by attendant).

Mr. Bristol: Will you start up the Doughty and Davis machine, too.

(Attendant complies).

Q. Now, what is your observation as to the Doughty and Davis machine in respect to interference between the blades on the agitator and clothes that are being washed?

A. That there is similarly interference in that ma-
399 chine of the agitator with the fabric.

Q. Will you please demonstrate and explain what happens when a similar sheet is put into the Doughty and Davis apparatus?

A. The meter reading with the Doughty and Davis machine operating with water alone therein is about 200. If Mr. Papworth will similarly take hold of the blade of this machine—(Operator complies)—it can be seen that such interference raises the reading to 210, 250, 300, according to the degree of interference with the impeller.

The Witness: (To attendant) Now, if you will, put a sheet into this machine.

Q. Let us have the weight of this sheet.

The Attendant: 1 pound 12 ounces.

A. There is similarly no change in reading at first but as the sheet comes into contact with the impeller the reading goes up, 220, 230, 240, 250, 260, 270 and it settles down at about 260 average, showing that here, likewise, there is interference of the agitator with the fabric, resulting in the consumption of power.

Q. Professor Taggart, what is your observation with regard to the Jardine machine and the defendant's machine with respect to contact or interference between the clothes and the agitator?

400 A. That there is contact and interference in both.

Mr. Bristol: Mr. Lane may cross-examine concerning this phase of the testimony.

Mr. Lane: No cross-examination on this now.

Q. Are you familiar, Professor, with the Morse patent, Number 106,853 of 1870?

A. Yes.

Q. Are you prepared to demonstrate the action of the machine described in that patent? A. Yes.

Q. Will you please identify the machine?

A. I have here a device consisting of a tub and agitator constructed in accordance with the drawings and specifications of the Morse patent.

Mr. Bristol: I ask that the apparatus which the witness has identified be marked Defendant's Exhibit 24 and I offer it in evidence.

(Machine referred to marked Defendant's Exhibit 24 and offered in evidence).

Q. Now, will you explain the construction of this machine referring to the Morse patent if you have occasion to do so?

A. The machine consists of a tub of usual size with flat bottom, slightly flaring walls and a wood disc, the agitator located at the bottom of the machine, of the tub, with 8

401 blades of different lengths, that is two different lengths set, not radially in this case but tangentially to a circle surrounding the axis of rotation. The disc is perforated with four holes near the center designed, according to the patent specification, to permit of a certain amount of

circulation under the impeller, thus to prevent collection of sediment there. There is a center post composed of vertical slats that surround the main driving post of the disc. The disc is arranged or the impeller is arranged to be manually operated; the blades are about two inches to two and one-half inches high. Alternate blades extend to the periphery of the disc and the other blades extend about between one-half and two-thirds of the way to the periphery. The long blades themselves have small holes, actually about 3/4 inch holes near the end.

Q. Will you demonstrate the action of this machine?

(Tub of Defendant's Exhibit 24 filled with water by attendant.)

A. The tub has now been filled with water to a point about 3 inches down from the rim of the tub and I will ask Mr. Papworth to start oscillating.

(Attendant operates machine by hand.)

It will be seen that the water at the surface presents
402 about the same degree of agitation as was present in the under-water agitator machines which were demonstrated last night. (Bandana handkerchief placed in machine). A bandana handkerchief placed in the machine, started down the center post and [illegible]ching the disc was thrown out at the bottom, came up [illegible]de walls, passed into the center and down again and [illegible] is repeated over and over again as the apparatus is r[illegible]ed. We have the same surface currents here meeting that were described last night and the handkerchief as and when it comes in contact with the blade is dragged around circumferentially or thrown around from one position to the other in the tub. When not so engaged it turns over generally in a plane above the impeller.

Q. Now, will you demonstrate the action of this machine when fabrics are contained in it also?

A. I am now placing a 3½ pound load in the machine.

Mr. Lane: The machine is being operated by the operator while you are doing that, isn't it?

A. While the machine is being operated. There are now 3½ pounds of fabric in the machine and it can be seen by watching the fabrics that they are coming up the sides and moving in toward the disc and going down at the center and
it may be inferred, therefore, that they are coming out
403 also at the bottom, thus completing the familiar circuits. There is also apparent at the surface a cer-

tain amount of sidewise dragging of the load which indicates that the lower part of the load is being caught by the blades in just the same way that it was caught by the blades of the impeller in the machines which were operated last night.

Mr. Lane: How long has your very strong assistant operated that machine would you say?

The Witness: Right now?

Mr. Lane: Yes.

The Witness: Probably two or three minutes.

Mr. Lane: Do you want to put in about twice that amount of clothes there and operate it?

Mr. Bristol: Let me finish the direct examination, if you will.

Mr. Lane: All right.

By Mr. Bristol:

Q. Can you estimate the speed at which Mr. Papworth has oscillated the Morse machine?

A. I would estimate it at somewhere around 30 revolutions per minute.

Q. Do you mean revolutions or oscillations?

A. I mean oscillations per minute.

Mr. Bristol: You may cross-examine as to this demonstration, Mr. Lane.

404 Cross-Examination.

By Mr. Lane:

Q. Just put in twice as many clothes and operate it. Put in a couple of sheets, will you?

A. Which is it you want, a 3½ pound load or two sheets?

Q. A 3½ pound load but have two sheets in that load?

A. I can't do it.

Q. You can come pretty close to it.

A. Do you want two sheets? Is that what you want?

Q. Put two sheets and then the balance of the load, will you?

A. There will be no balance; the two sheets run over.

Q. I thought you said 1 pound and 12 ounces.

A. I did.

Q. Then put two sheets in. That is enough.

The Attendant: Two sheets, 3 pounds and 9 ounces.

Q. Just drop those in the way you did in the other tub bunched up.

A. Do you want to drop them in?

Q. No, just drop them in the way the other man dropped them in?

A. I can't get them under the arms of this impeller with the vertical arm on the impeller.

Q. Just drop them in before he starts.

A. (Witness puts two sheets in machine.)

405 Q. By the way, Professor, did you ever know of any housewife weighing clothes at all before she put them in the tub?

A. Well, I notice that a great many of the instructions of the washing machines, in the directions—.

Q. (Interrupting) I asked you one question, will you answer that, do you know of any housewife that uses scales for weighing her clothes before operating one of these washing machines?

A. No, I do not.

Q. That is all I wanted know. I wonder if you would mind trying operating that machine yourself for two or three minutes, Professor?

A. I would very much. Go ahead and operate it.

(Addressing attendant.)

Q. Will you operate that, Professor?

A. I will not. (Attendant operates machine by hand.)

Q. How long do you think it would take to wash clothes in that machine, Professor? A. I have run a test.

Q. I have asked you— A. I don't think I know.

Q. I mean with that load,—wash them clean, I mean, now?

A. That is what I am talking about. With a 4 pound load in the machine—

406 Q. (Interrupting) I am asking you about this load here? A. What?

Q. I am asking you about the load you have in the machine now.

A. I have not operated it with a 7 pound load.

Q. All right. Keep on.

A. The fabrics are turning over slowly; the sheet, one part of it is not turning because of an air blister that tends to hold it at the top. There is a slower turn-over than there was before the sheet was put in and before it interfered.

Mr. Lane: I wonder if the Court would mind giving that just one turn.

The Court: Yes, I will do it, even three minutes.

(Court turns machine.)

The Witness: About half way will be enough.

The Court: A Missouri farmer ought to be able to run a washing machine.

Mr. Lane: Thank you very much, Judge.

A. The increased load slowed down the turn-over just as increased loads slowed down the turn-over in the machines last night. The sheet tended to catch on the impeller and stop turn-over just as the sheet caught on the impeller and turn to one side in the turn-over in the Maytag machine.

Q. Is this a lecture? I have not asked any question about this.

407 A. I was talking about the result for the record of the load that you asked me to put in.

Q. Will you limit yourself to my examination. You can do that on direct.

A. That was my understanding that that was what I was doing, Mr. Lane.

Q. I just want you to limit yourself to my questions because we will take all day going on with lectures. Do you think the ordinary housewife would prefer that machine or the old fashioned scrub board in use at the time that claimed invention was made in 1870?

A. What do you mean, just a rub board?

Q. That is what I mean exactly; which would she prefer, that machine or the old fashioned rub board?

A. Operated manually?

Q. Womanly, yes.

A. I should think she would prefer the rub board; the labor would be less.

Mr. Lane: That is all.

Further Direct Examination.

By Mr. Bristol:

Q. Professor, have you performed any washing tests with this machine? A. Yes, I have.

Q. Please describe the test and give us the results?

408 A. The test was made with a 4 pound load in the machine and attached to the load were small squares of cloth that had been soiled to a standard extent that was measurable by means of a device called a photometer. The charge of water, soapy water was put in and the machine was run with 4 pounds of fabric plus these soiled cloths for three 15 minute periods, with three 5 minute rinsing periods and then the fabrics removed and the soiled cloths tested for the extent of removal of dirt. The results showed about 32 per cent removal of the dirt that was in the cloths, which is slight-

ly better, as a matter of fact, than the mechanically operated machine, the Snyder, the Easy against which it was run, with the same time and type of washing. The apparatus was oscillated at about 30 oscillations per minute during the period of the tests.

Mr. Lane: You referred to the Easy. Was the Easy substantially like the defendant's machine?

The Witness: Yes, sir.

Mr. Bristol: You have no further cross-examination on this demonstration, Mr. Lane?

Mr. Lane: Not now.

By Mr. Bristol:

Q. Mr. Taggart, will you refer please to an apparatus which was marked Defendant's Exhibit 20 for identification at the last session and which has also been marked in
409 this case Defendant's Deposition Exhibit Number 103 and compare that, please, with the description of the Davis patent Number 1,240,826. This, if your Honor recalls, is the machine which the deposition shows was sold on January 1, 1920.

A. This machine consists of a cylindrical tub as illustrated in Figure 1 of the Davis patent by the numeral 1, and impeller 2, that, in the apparatus opened up as I have it now is against the cover but which in the Davis patent drawing is shown at the bottom of the tub as it will go when there is no water in the tub because of the fact that it is mounted to float in position at the top of the water and load, when they are in the machine.

This particular machine has a rack and pinion and crank driving mechanism at the top which is not shown in the Davis patent drawing, Davis saying at page 1, line 60 with respect to the disc of his apparatus "which can be driven in any manner desired, as by means of a shaft, 3, connected to suitable motor, not shown." Now, in this particular case the transmission mechanism is at the top of the machine and the motor is mounted underneath. The impeller disc in the apparatus as made has more blades than are shown on the Davis drawing, disc Figure 2, there being two long blades and nine short ones although there were intended to be ten short ones
410 or were, as originally built.

Mr. Lane: How do you know that, Professor?

The Witness: Because I see the nail holes where the cleat has pulled out.

Mr. Lane: All right.

A. And there are now nine as against six short blades marked 6 on the drawing of the Davis patent.

Q. How does the diameter of the agitator on this machine, Defendant's Exhibit 20, compare with the diameter of the tub in which it operates?

A. Well, it looks to be about 8 or 9 inches less diameter than the diameter of the tub.

Mr. Lane: Where did you find that measurement?

Mr. Bristol: Just a minute, please, Mr. Lane.

(Witness measures with tape measure).

Q. The impeller disc is 17½ inches diameter, the tub is about 25 inches diameter.

Q. And what is the depth of the tub, please, for the record? A. About 13 inches.

Q. Will you describe the character of the inside surfaces of the tub, please?

A. The tub has smooth walls. It has at the bottom 8 V shaped ribs that project upward from the bottom
411 somewhat less than 1/8 of an inch. These ribs are radially arranged and extend from the periphery of the drain hole, which is about an inch and a half to two inches diameter at the center to within about an inch of the wall of the tub.

Mr. Bristol: Would your Honor be interested to get—

The Court: I looked at that last evening; I have a thorough picture of them in my mind.

Q. Now, Professor Taggart, will you proceed to have this machine operated with water in the tub, water alone, and tell us under such circumstances what happens with respect to the level at which the agitator operates.

412 A. (To the attendant) Will you please turn on the water in this tub? Water has now been placed in the tub to within about four and five-eights inches of the top of the rim around the tub. I have closed the lid of the tub and the impeller when pushed down comes back to a position at the surface, indicating that it is floating. I place a piece of cardboard on the vertical shaft, clipped on with a paper clip; and I am now going to measure a mark for a point on that paper that is three inches above the place where the shaft enters the cover. I have done so and marked it with an arrow.

(To the attendant) Now, if you will operate it, please.

The apparatus is now in oscillation.

Q. While that machine is running, will you time the rate of oscillations, please, and state what it is?

A. It is about 37 oscillations per minute. As I set my rule up parallel to the shaft, it can be seen that the mark made has not moved down at all. In other words, the disk and collar are now oscillating in a fixed position within the tub.

Q. Did you note the time at which the operation of this machine began, with your watch? A. Yes, sir.

Q. Please state it for the record?

A. It was ten o'clock, thirteen minutes, and thirty seconds.

Q. And how long has it been in operation now?

413 A. Two and one half minutes.

Q. We will let this machine run for some few minutes more at least and observe the position of the agitator at the end of some longer time.

Mr. Bristol: Mr. Lane, you may cross-examine.

Cross-Examination.

By Mr. Lane:

Q. I just wondered why you operated this machine at 36 or 37 and why you operated the one in the glass tub at 40 yesterday?

A. This machine is being operated at the speed at which it was operating when it came to me.

Mr. Lane: That is all.

Further Direct Examination.

By Mr. Bristol:

Q. Professor, I would like to ask you to demonstrate the old Miller machine with the smooth tub. Let the Form 3 machine run, if you please.

A. (To the attendant) Will you bring up the old Miller machine, please, to the front of the court room?

(The machine is brought forward by the attendants.)

Q. Professor, will you describe briefly this machine which has been marked Defendant's Exhibit 19 for identification?

A. This machine consists of a circular tub about 23½ inches internal diameter and twelve inches deep,

414 smooth on the side walls, and having at the bottom twelve ribs or corrugations, six long and six short, the longer ones being about seven inches long and terminating about an inch and three-quarters from the side walls radially,

the short ones four inches long and terminating at the same distance from the side walls, the height being slightly over one-eighth inch and the width about an inch and a half at the base and coming up smoothly, gradually on both sides.

There is a center piece projecting upward through the bottom of the tub with wings for driving the impeller from a power operated mechanism located under the tub. The mechanism reciprocates. I have measured it to be about 180 degrees. The impeller is a wooden disk, sixteen inches in diameter, with four blades about four inches long, each roughly triangular of a height of about an inch and a half and with ends the plane of which is perpendicular with or to the plane of the disk. The blades extend to within about three-quarters of an inch of the edge of the disk and are in general radial, although, this being an old disk, there has been some knocking of the blades out of the radial position.

Q. Now, will you turn back for a moment to the Davis 1900 Form 3 machine, Defendant's Exhibit 20, and tell us how long that machine has now been operating; just read your time off for the record?

415 A. Ten twenty-three, I have now.

Q. Will you state what the level of the agitator shaft shows at the present time?

A. The mark that I had placed at three inches above the point at which the shaft enters the driving mechanism is at the same level now with the machine operating, and (stopping the machine) at the same level when I have stopped the machine operating.

Q. May we have the machine loaded with, say, six pounds of clothes and operated again and the facts as to the position of the agitator states?

A. I will do so. (To the Attendant) Will you place six pounds of clothes in the machine?

(Clothes are placed in the machine by the attendant.)

Mr. Lane: May I see inside of that machine just a minute, please, sir?

The Witness: Certainly (opening cover of machine).

Mr. Lane: Thank you.

A. I have now placed six pounds of clothes in the machine and closed the cover. The marking that I made on the paper before now stands at about three and three-eighths inches, the water level having been raised to some extent by the clothes that have been placed in the machine.

Q. Did you observe before you closed the lid of the
416 machine whether all the clothes were down in the water or whether some of them were up toward the top?

A. Some of them were up toward the top. They looked from the surface just as any load of fabrics does in the water.

Q. Now, please proceed.

A. (To the attendant) Will you turn that on, please?

(The machine is placed in operation.)

Q. Will you note the time for the record?

A. Ten twenty-seven the machine starts.

Q. Did you state the load of clothes, six pounds?

A. Yes.

Q. Now, while that machine is continuing in operation will you return to the Miller smooth tub machine, Defendant's Exhibit 9? I would like to have you demonstrate this actual machine with water and a bandana handkerchief so that we may see just what happens.

A. Yes, sir. (To the attendant) Will you please turn water into this machine?

(The machine was filled with water.)

A. The Miller machine has now been filled with water to a point within about three and a half inches of the top of the tub and the impeller placed in the tub, and it is floating on the surface of the water in the tub. This is the same impeller that was used last night in demonstration in the last tub.

Q. Exhibit 18. Can you make this impeller stay under
417 the water by pushing it down, Professor?

A. I have pushed it three or four inches under water three times and each time it returns immediately to the floating position.

Q. Now, will you proceed to demonstrate with a bandana handkerchief?

A. I have placed the bandana handkerchief in the tub. It can be seen really to just go down a little deeper and come up in the tub, occasionally being caught by the blades and pushed to one side or the other. I don't know whether Your Honor can see the things turning over as you saw it last night, or not. It is a little more difficult to see with this disturbance than it was through the side of the tub.

Mr. Lane: The water is splashing out over the side of the tub.

The Witness: Yes.

Mr. Bristol: Perhaps we had better get the light.

(A spot light was brought forward.)

A. Now, with the light on I think the turning motion can be seen more clearly. The flow in this machine is the same as demonstrated in the glass machine and is outward from under the impeller, down along the sides of the tub, inward, and upward, and the fabric, when there is a single piece, follows the movement more or less.

418 Q. Professor Taggart, can you determine the rate at which this machine is oscillating?

A. About forty-seven oscillations per minute, I make it.

Mr. Bristol: Mr. Lane, would you like to cross-examine the witness on this phase of the demonstration?

Cross-Examination.

By Mr. Lane:

Q. You have testified that the handkerchief goes around and follows the water down to the botom of the tub. I haven't seen it at all. I just call attention to the fact that it is staying at the impeller edge all the time.

A. If you will read the testimony, Mr. Lane, you will find that I said—

Q. Are you counsel in the case? I am not asking you a question at all.

A. Oh, I thought you asked me a question.

Mr. Bristol: Any further cross-examination, Mr. Lane?

Mr. Lane: No.

Further Direct Examination.

By Mr. Bristol:

Q. Now, Professor, will you demonstrate this machine when it is loaded with some clothes?

(The attendant places clothes in the machine.)

A. There is now three and a half pounds of clothes
419 in the machine. The fabrics can be seen from the surface to be engaged by the impeller blade and dragged back and forth through the water, and if attention is riveted for a time on any one piece, say the red bandana, I think it will be observed that it leaves the impeller and disappears down the side of the tub. It went down and was engaged again by the impeller. Now it started down and came up again. Now it has gone down the side and come up again and engaged the impeller.

Q. How does this demonstration which you are now running compare with the demonstration in the glass tub, Defendant's Exhibit 18, which you made last night?

A. The handkerchief has gone down, completely under now. The appearance from the top of the tub with this machine and impeller is the same so far as my observation goes as the appearance into the top of the glass-sided machine. Now the red handkerchief has appeared again after about thirty seconds to a minute, perhaps. It has now passed out and down the side and has now come up under the impeller and is now coming up under the rim again. It has now passed down the side, and it has now come up again to engagement with the impeller without going completely under the load.

Q. Professor Taggart, will you give us the time that the Form 3 machine has been in operation and the level of the agitator shaft?

420 A. It is now ten-forty. The level of the mark that I made on the paper is, while the machine is in motion three and one-quarter inches above the iron work that I measured from before. (Stopping the machine). I have now stopped the machine and the level is three and one-quarter inches above the iron work.

Mr. Bristol: Now, Mr. Lane, will you cross-examine as to this phase of the testimony?

Cross-Examination.

By Mr. Lane:

Q. What is the purpose of this rub board?

A. Do you mean the impeller?

Q. That is what they called it.

A. The purpose of the impeller is to cause the water to circulate, the fabrics to be turned over and to be presented one part after another to the impeller,—

Q. The only thing I am asking you about is what is the purpose of the slide arrangement on that shaft?

A. Might I complete my answer?

Q. No; I wish you would answer my question as to what the purpose of this sliding arrangement between the shaft and the impeller is?

A. Your question is limited to the sliding arrangement?

Q. Yes.

A. The purpose of the sliding arrangement is to permit the impeller to adapt itself to the level of the water

421 placed in the tub.

Q. Why do you not put less water in that operation than you have here? Why do you put that amount of water in the tub when you are operating with so few clothes?

A. The level of the water now is about the same distance below the surface of the tub as all the other tubs have been filled.

Q. That is, all these experimental tubs you brought in here?

A. That is right, and as tubs are ordinarily filled for washing purposes.

Q. Did you tell me the speed at which that was operating?

A. Yes.

Q. How did you attain the speed that you have here?

A. This machine is in the form in which it came to me.

Q. You do not know what had been done to it or with it before it got to you?

A. I have no knowledge of its history whatsoever.

Mr. Lane: That is all.

422 Further Direct Examination.

By Mr. Bristol:

Q. Mr. Lane included in one of his questions to you on cross-examination, Professor Taggart, a reference to the demonstration machines in this room as "experimental" machines. Are these glass tub apparatuses experimental machines?

A. They differ from the machines that are ordinarily in use only in that they have glass tubs instead of the metal tubs, and one of them in that the type of impeller that is to be used in it can be changed, and one of them has a variable speed motor; but in general they are the same as the machines used in ordinary washings.

Q. What is the purpose of the glass tubs?

A. To make for ready seeing of what goes on below the surface of the water, because the surface view may easily be deceptive.

Q. You have conducted these demonstrations in plain water without soap. Will you explain the reasons for making them in that way?

A. Soap makes the water cloudy and it is not as easy to see into the tub to see what is going on with it present.

Q. Now, Professor Taggart, will you turn to the Hanna British patent, No. 19027 of 1889, and explain briefly the nature of the action of that machine shown in that patent?

A. Referring to Figure 1 of the patent, the machine
423 consists of a tub with cylindrical cross section as shown in the plan, vertical side walls, baffles around the periphery, an impeller of shape similar to that in Jardine and defendant's tubs consisting of a high center post with vanes that come down the sides of the post and then extend out

along the disk that is placed at the bottom. This particular form of that high center post dolly has the blades projecting beyond the edge of the disk as they do in the impeller in the defendant's machine, and has also auxiliary blades that are placed intermediate the larger blades that likewise project out over the edge of the disk. The apparatus is indicated to be belt driven from a source of power through a center shaft underneath and up through the center post of the machine. The particular point of the invention, according to the patentee's statement is the provision of a well in the bottom of the tub in which the impeller is sunk to operate and thus bring the upper surface of the disk in the same plane as the general lower surface of the tub itself, the tub bottom. There is provision also for making the surface of approach between the impeller and this tub bottom on a bevel, the idea being that by thus sinking the impeller on the beveling edge of it and extending the wings or blades over the edge of the disk that fabrics in traveling out from the impeller toward the side of the apparatus will not be caught in the joint between the impeller and the wall, or in the space, but it will travel
424 directly over. The function of the ribs "D" is to prevent continuous swirl, since this machine is intended to revolve in one direction only, and the ribs break up that swirl and produce a substantially vertical current or currents along the side walls, so that fabrics are caused to circulate therein in the same way as in an oscillating tub. The patentee describes this effect at Page 2, Line 9 and also describes the contrary currents or meeting currents we have already discussed, saying of the fabrics, "They are between the contrary currents produced by the rotating blades "A" and the stationary projections "D" on the inside of the casing."

Q. Now, will you compare the water movement in a machine such as described in the Hanna patent with the liquid movement described in the Marchand patent, No. 273,569?

A. The action of the liquid in the Marchand apparatus is indicated in the drawing of that apparatus, where the liquid is shown to move outward from the impeller toward the bottom of the container, thence upward along the side walls, over along the top, and downward through the center of the impeller again. This is what always happens when an impeller is caused to rotate in the bottom of a container. In the Marchand apparatus where no ribs are provided on the side the speed of the impeller must be balanced against the amount of material that is placed in the container so that the swirl
425 is not sufficient to cause the material to go over the sides. In the Hanna apparatus, the provision of the ribs or baffles along the side wall breaks up this swirl

and permits a higher degree of agitation, a higher rate of rotation without spill over the sides than would be possible with an apparatus of the type pictured in the Marchand patent.

Mr. Bristol: At this point, Your Honor, I think it would be pertinent to draw your attention to the case of Marchand vs. Emken, 132 U. S. 195, in which the Supreme Court in 1889 held this same Marchand patent invalid. I would like to read you a short passage from the opinion in that case, on Page 199. "The object of agitating the liquid, while making hydrogen peroxide, is to keep the barium, which is three times as heavy as water, suspended in the acid so that the particles may come in contact with the particles of acid. Whether they come in contact while going around, rising, settling or remaining stationary can make no difference. Divest the case of the air of mystery with which it is environed, and it seems simple enough. The complainant's predecessors knew that to keep the barium up in the solution they must stir it. The complainant knew this. Unlike them, however, he manufactured on a scale large enough to make it essential to employ a power shaft. The oar-shaped sticks which for-
426 merly went round and round by hand now go round and round by machinery. The court then refers to the contention of the plaintiff that, by the method set out in the patent, a movement was given to the acid which had never before been imparted to it in the manufacture of hydrogen peroxide, because the liquid is thrown out towards the circumference of the vessel at the bottom, rises at the sides, returns to the centre, and then descends, to be again thrown out at the bottom, while at the same time it is carried round and round, and says that this, being reduced to still simpler language means that the machine will stir large quantities of the liquid more thoroughly than the hand-worked paddles. It adds, 'The pretense that the complainant had discovered some occult and wonder-working power, in the motion of a screw revolving in the bottom of a tub, is not sustained by the proof Whether the contents of the tub be [oxegenated] water, or soap, or lye, or tartaric acid, the action will be the same. That rotary, eddying motions in liquid will result from the revolving screw, that the liquid will rise highest at the periphery of the tub, and thus have the tendency at the top to fall towards the centre, were well-understood operations of centrifugal force. As every device, apparatus, formula, law of nature, motion and ingredient adopted by the complainant was old, the patent must be held invalid, unless it
427 can be said that giving to oxygenated water a well-known rotary motion springs from that intuitive fa-

culty of the mind put forth in the search for new results or new methods, creating what had not before existed, or bringing to light what lay hidden from vision. No such faculty has been tasked in giving form to this patent. There is here no sufficient foundation upon which to rest a claim which, if construed as broadly as the complainant insists it should be, practically makes all pay tribute who stir the mixture in question by machinery, and by hand also, provided substantially the same movement can be produced by hand stirring, and this seems to be a disputed question upon the proof. The complainant's claim to be enrolled upon the list of inventors is based upon propositions too theoretical and visionary for acceptance.' ''

Q. Professor Taggart, will you explain briefly the apparatus shown and described in the Runkle patent, No. 131,629, to which you made reference in one of your answers to Mr. Lane on cross-examination?

A. This apparatus consists as shown in the drawings of a cylindrical tub with an impeller, a circular disk located at the bottom of the tub, blades on that disk, and a center post comprising the rods ''P'' that extend upward from the
428 disk to a holding plate at the top. The mechanism as shown and as described is one for one way rotation, and this tub, like the Hanna tub, is provided with baffles ''S'' on the wall to prevent the swirl of the liquid and convert it into the flow upward, inward, downward, and outward that is necessary to keep the fabrics coming to the impeller.

The specification calls attention to the fact that it will wash clothes quickly, thoroughly, and without injuring them. It calls attention in the second column to an action of the water when the fabrics are in motion which is entitled at one place ''violent commotion'' and at another place ''violent agitation''. In regard to structure it calls particular attention to the fact that the circular blade ''Q'', that is to say the disk of the agitator, is made smaller than the interior of the vessel ''A'' and in the drawing it is shown that the edges are spaced a material distance from the walls of the tub. The particular mechanism shown here has an iron bottom and a heater underneath so that the clothes may be either heated while being washed or that the water in the tub may thereby be kept hot while the washing is going on.

Q. Will you refer, please, to the Henin French patent, No. 363,514, and explain the apparatus which is there shown and described?

A. Figure 2 and Figure 4 directly underneath it show
429 the essentials of the tub and impeller elements of the mechanism and show that the tub is cylindrical with

corrugated walls and bottom and that in it is placed a bottom positioned disk impeller with wings or blades running up the center post and with intermediate blades such as were in the Hanna apparatus. The disk is described as made of slats crossed so as to prevent the warping of the disk. The apparatus is prescribed to be oscillated 120 degrees. That is, on Page 4 of the translation and the third line, it is stated, "An oscillatory motion equal to one-third of a turn in each direction is to be imparted to the impeller."

At the bottom of that same page and next to the last paragraph it is stated that the machine is arranged for either hand or power drive according to the desire of the operator. This machine has a feature that has not been present in either of the apparatuses that I have described this morning, of a device for permitting an under-drive without using a stuffing-box by projecting a stationary tube up from the bottom of the tub at the center, projecting this to a height above the normal water level in the machine and then bringing the drive shaft up inside that and attaching the impeller to the drive shaft at the top. In that way, a considerable improvement in mechanical construction is attained.

Q. How does that construction compare with the way
430 in which the agitator drive is connected in the defendant's machine? A. That is the same method.

Q. How does it compare with the way in which the agitator drive is provided in the present day machines of the Maytag Company with the high center post?

A. They use the same method.

Q. And how does it compare with the method of providing the drive on the agitator in the machine shown in the Snyder patent?

A. The machine shown in the Snyder patent has not such a provision, but a stuffing-box method of getting the under-drive through the tub bottom.

431 Q. While we are on the subject of the Snyder patent for a moment, you heard some testimony about counter-sinking the gyrator in the tub of the Maytag commercial machine, did you not, yesterday? A. Yes.

Q. And are you familiar with the counter-sinking construction which the plaintiff has used? A. Yes.

Q. How did that compare with any expedient disclosed in the Hanna British patent?

A. That same expedient of counter-sinking is used and disclosed in the Hanna patent.

Q. Now, will you proceed with your discussion of the Henin French patent? Have you covered the effect upon the

washing fluid when the machine of the Henin patent is operated?

A. The patent translation states on page 3 that the ribs and vanes on the impeller are for the circulation of the water. It does not specify what the circulation is but in that apparatus, a replica of which I have run, as in all the other apparatus with bottom agitators in a container, the flow of liquid is outward at the bottom, upward along the side walls, inward and downward along the center post under the impulsion of the agitator and that motion is imparted also to the fabric and they are thus brought successively to the agitator so that the rubbing action of the agitator and its function of dragging and swishing the fabric through the water and thus washing them, will be brought into play.

432

Q. Will you please refer to the Ferguson patent, Number 83,145, and explain the apparatus described in that patent?

A. This is another of the apparatus with continuous rotation of a bottom position, high center post, disc type impeller in a tub that is smooth except for the baffles marked A Prime in this particular instance that are provided to stop the circulation movement of the water and cause it to rise more directly along the walls of the tub in typical circulation. The patent states at the first full paragraph in the second column of the first page a brief description of a vertical cylindrical tub with interior ribs A Prime, that I have mentioned, and the shaft, disc, the beaters as they are called, B Prime, on the sides of the center post and on the disc which agitate the water in the tub as the shaft is revolved and the action in this will be the same in kind as in the other under water agitator machines. These machines with continuous rotation have the definite disadvantage that materials tend to wind up on the center post and that even with the provision of the ribs, unless the speed of oscillation is fitted perfectly to the load, and a rather light load is kept in the machine, then you get wind-up on the center post and the fabrics do not follow with the water as well as they do in one of these oscillatory machines.

433

Q. How does the base of the agitator in the Ferguson machine compare in diameter with the tub?

A. Well, it is definitely smaller. If we may take the patent drawing as being somewhere near scale then it scales an inch and 7-1/16 against—no, 2 inches and 7-1/6 against a tub diameter of 3 inches and 5-1/6.

Q. Will you turn to the Hermance patent, Number 88,474 and explain the apparatus therein described?

A. This apparatus comprises a tub, 1, as the specification calls it, a wash boiler and a vibrating metallic wheel that is

shown in the sketch as the circular member shown in the plan view, with holes through it, and shown in side elevation with the ribs, B, which also have some small holes in the sides and which are, according to the specification, made of bent metal with open ends so as to contribute to the circulation of the water in the apparatus. Provision is made for manual drive by the handle D, and it is stated at the second full paragraph in the second column "The operator, by the use of the crank D turns the wheel E, say, about one-half around, then back again." That is somewhere approximately 180 degrees amplitude of oscillation—"rapidly from side to side, causing a vibrating or reciprocating motion of the wheel." It is stated that such operation of the machine produces a
434 tremendous agitation of the suds, that the water rushes out toward the side, toward the walls, and coming back, some of it comes in through these open ends of the ribs and through the perforations and thus flushes against the fabric that is at that instant on the impeller. The patentee says at the fourth full paragraph on that page that this particular kind of a ribbed wheel is old; that apparatus for washing clothes by the friction of the disc and radial ribs is well known or is known and that he does not claim that. I have operated a machine of this type and the operation is very similar to what we saw here in the Morse apparatus with manual operations. There is turn-over of the materials and one part after another brought to the impeller for its action. The currents are outward at the bottom, up the side walls, inward at the top and down along the center.

Q. Now, will you refer to the Groat patent Number 113,762 and explain that apparatus, briefly?

A. This is the same kind of an apparatus, a tub with a bottom positioned ribbed impeller and a center post running up to the actuating wheel or handle at the top for manual operation; the statement in the second full paragraph of the second column is to the effect that the shaft may be either rotated or oscillated. The paragraph about the fifth or sixth in the first column states this particular
435 form of apparatus, namely the bottom positioned impeller to be then old.

Mr. Lane: Is that where he calls it the wheel? Is that the sort of invention?

A. "This invention relates to improvement." It is the paragraph that thus starts, about a third of the way down the first column. On the last full paragraph in the second column the method of operation is indicated in that the function of the ribs is stated to be to rub the articles, to turn the articles, meaning the pieces of fabric, and to agitate

the water violently in the tub, and then about half way down that same column at the end of the paragraph beginning "The wheel" it is stated that the ribs act to dash the water, the ribs and the perforations in the impeller to dash the water among the clothes.

Q. Will you refer please to the Mills patent Number 1,118,210 and explain the mechanisms shown in that patent for extending an agitator shaft upward through the bottom of the tub?

A. This patent in Figure 3 gives a fairly good presentation of the kind of high center post, tubular under-drive that I described in connection with the Henin patent; that is to say it shows the tube 45 extending up from a tight flange connection with the bottom of the tub and then the shaft 35—there is a solid shaft 35 extending up from the gear wheel at the bottom through the center of the tube 45; being free to move therein and terminating in the cap plate 47, which is in turn attached to the outer tube 46 on which the impeller 40 with blades 48 is operated. That is, tube 46 is attached to the casting 36 with wings 49 and those wings on the casting held by means of the bolts shown on plates 48, so that the rotary motion of the shaft 19 is transmitted through beveled gears, a suitable gearing to an oscillatory motion of the gear wheel 32, and that then is transmitted up through the center shaft. There need be no tight joints in that at all because the inner tube 45 projects above the water level in the machine and being tightly engaged with the tub at the bottom there can be no leak.

436

Q. Now, will you refer to the Snyder patent Number 1,209,893 and explain the arrangement there for extending an agitator shaft upward through the bottom of a tub?

A. Well, this is an entirely similar set-up. The central shaft 13 on Figure 1 comes up through an inner tube, 10, I think it is and terminates in the cap member—I mean the shaft is attached to the cap member, 15, and that extended downwardly has an outer tube carrying wings or splines 18, on which the four armed peg-like impeller can slide so with the inner tube extending up above the water level there is no danger of leakage and yet the motion of the under mechanism is transmitted through the bottom of the tub to the impeller.

437

Q. In a general way how does the disclosure of this Snyder patent Number 1,209,893 compare with the construction which you have pointed out in the Miller smooth tub machine, Defendant's Exhibit 19?

A. Well, it is similar in general principle. I have not had that particular center tube disassembled but it is one of the center tube, high center post devices.

Q. Will you turn now please to the Foster and Garrison patent Number 832,787 and explain the apparatus described in that patent?

A. This apparatus consists of a circular tub with bottom positioned impeller. The tub is provided with a removable piece marked 32 in Figure 5, that is supposed to fit down on the interior of the tub and thus present a very coarsely corrugated interior surface as shown with the sides of those corrugations straight as shown. The impeller consists of two blades projecting outward at 180 degrees from the shaft and so constructed that they are beveled slightly upward. A hand driven mechanism is provided and it is directed on page 2, line 28, to swing the crank back and forth about the distance one can reach for perhaps ten minutes or it may be entirely revolved now and then in alternation with the short swinging movement; in other words, to oscillate to greater or less degrees according to the behavior of the fabrics in the tub.

438

Q. What sort of a load is contemplated by the patentee, referring to page 2, the fourth line from the bottom of the left hand column?

Mr. Lane: Do you want to read it in?

Mr. Bristol: Yes, please.

Mr. Lane: Don't you want to read it in yourself as long as you got that far? I don't think he is looking at the same place you are.

Q. On the second page is the place I am referring to Mr. Taggart, the fourth line from the bottom of the first column.

A. It is stated "Now place in a few clothes and the agitator 15 and close and fasten door" and then operate the impeller.

Q. What does the patentee say as to wear on the clothes by his machine? I call your attention to lines 7 and 8 in the second column on the first page.

A. It is stated "And thus remove the dirt without wear".

Mr. Bristol: I will ask that this paper be marked for identification Defendant's Exhibit 25.

(Paper marked Defendant's Exhibit 25 for identification).

Q. Will you tell us what this paper is, Defendant's Exhibit 25?

439

A. It is a chart that I have prepared in order to make convenient comparisons between the different phrases in Claims 38 and 39 of the patent in suit.

Q. Have you found any clerical difficulty in trying to compare those claims, without some such arrangement as this? A. Yes.

Q. Will you please explain how this chart is made up?

A. In the first column is stated Claim 38 as it reads in the patent; the successive phrases, however, being spaced apart as shown. In the third column, Claim 39 is similarly arranged, that is continuously with merely a similar separation of phrases and words as they appear. In the center column Claim 39 is rearranged so as to bring together the phrases which correspond in Claim 39 to the four middle phrases, as it were, of Claim 38 but which, in Claim 39 as printed, have been moved around and the source of these rearranged phrases and words as indicated by the arrow headed lines that run from the third column to the second column.

Q. From your comparison of these claims of the Snyder patent in suit will you state please whether or not there are any significant differences between them?

A. There are not, in my opinion.

Mr. Bristol: I am not acquainted with your practice,
440 your Honor, on this matter of comparing claims with each other. If you would like to have this witness take this thing up phrase by phrase, I shall be glad to have him do so. If you think that it is a matter where simply reading the document will give you enough, I will pass it on.

The Court: It seems to me if you introduce this exhibit in evidence, as I apprehend you will do—perhaps you have already done that—it is self explanatory. As I understand it, Professor, in the third column you have the language of the claim just as it is set out in the original document.

The Witness: That is right, sir.

The Court: In the second column you have rearranged it but using the same words and phrases?

The Witness: Yes, sir.

The Court: And you have indicated how you arranged it in connection with the third column?

The Witness: Yes, sir.

The Court: I think it is very clear; I understand what it purports to be; I should not think it would be necessary to go over it orally.

Mr. Bristol: I offer the chart in evidence.

(Defendant's Exhibit 25, the chart referred to, received in evidence).

441 Mr. Bristol: I ask that this document be marked for identification Defendant's Exhibit 26.

(Document marked Defendant's Exhibit 26 for identification).

Q. Professor Taggart, will you refer to Defendant's Exhibit 26 and state what this chart is?

A. This is a chart that I have prepared for convenient comparison of Claim 20 of the Snyder patent with the drawings and specifications of the Davis patent.

The Court: Is Claim 20 involved in this proceeding?

Mr. Bristol: No, your Honor. The claims in issue in this case are 23, 26 and 29. We say that under the disclaimer statute, the Circuit Court of Appeals decision in the Brooklyn Edison case made the plaintiff well aware that there was subject matter that should have been disclaimed.

The Court: I get your idea.

Mr. Bristol: And Claim 20 is one which we believe should have been disclaimed. I offer the chart in evidence.

(Defendant's Exhibit 26, chart referred to, offered and received in evidence).

Mr. Bristol: Would you like the witness to take this, your Honor—this is a little different proposition than 38.

The Court: Yes, perhaps he should explain it.

442 Q. Will you please point out with reference to the chart the various elements called for by Claim 20 of the Snyder patent in suit and the showing of the Davis patent Number 1,240,826, which correspond to each one of those elements?

A. The words of Claim 20 are written in the order in which they appear in the patent at the left hand side of the page, broken up, however, into separate phrases and groups of phrases as indicated. On the right hand side are, as I stated, excerpts from the specification of the Davis patent and also Figures 1 and 2 therefrom. Lines are drawn connecting the particular phrases and groups of phrases in the Snyder claim across to corresponding elements of the drawing of the Davis patent or the pertinent phrases of parts of the specification of the patent.

Q. This Davis patent impeller was one which you demonstrated in Defendant's Exhibit 18, was it not? A. Yes.

Q. And the impeller itself which you used for the demonstration is the one marked Defendant's Exhibit 21?

A. Yes.

Q. I understand, Professor, that there was a correction which you wish to make with regard to some statement which you made last night concerning the amplitude of oscil-
443 lation of one of these machines. Are you prepared to make that correction at this time?

A. I am. I stated that the amplitude of the machine which is marked Defendant's Exhibit 23 was 180 degrees. It is about 200 degrees.

Q. And wish your testimony to be corrected accordingly?

A. Yes.

Mr. Bristol: My associate called my attention to the fact that the record does not show that the demonstration machines which were marked Defendant's Exhibits 14, 15 and 16 were offered in evidence. May they be received in evidence at the present time?

The Court: They are received in evidence.

Mr. Bristol: That concludes the direct examination of the witness.

Cross-Examination.

By Mr. Lane:

Q. Professor Taggart, the demonstrations of the glass tub, Snyder machine, the Doughty-Davis, Jardine and defendant's were substantially the same ones that you made before Judge Byers and which were witnessed by him, were they not?

A. Well, I do not remember that those were made in detail. We did not set them up parallel in the demonstration before Judge Byers and we had of course—well, as regards the first three machines, the Doughty machine is the
444 same, the Snyder machine has another tub in it since the glass tub there used was broken and in placing this one back we did not place the rim on and I have already stated the difference as to the Jardine machine. I do not remember the loads exactly.

Q. You made substantially the same demonstrations with machines almost identical with the one you have here representing Snyder, Doughty and Davis and Jardine as you did before Judge Byers, didn't you?

A. As I say, there were not in parallel position as done there.

Q. I am asking you whether you operated these machines?

A. You mean did I have the same speeds and the same loads?

Q. Yes.

A. Substantially the same loads and the same speeds.

Q. And you operated the Easy machine down there before Judge Byers, which is substantially identical with defendant's machine?

A. I did operate the machine yes.

Q. And that is substantially identical in operation with the defendant's machine here isn't it?

A. And that is substantially identical in operation.

Q. You also operated a machine substantially like the device you have here claimed to represent the Morse pat-

445 ent, didn't you?

A. I don't recollect whether this machine was operated in court or not down there.

Q. You had the machine there in court, didn't you?

A. I don't know whether I had it in court or not. I had it down there in the laboratory.

Q. Can you find out whether you operated that machine and let me know? A. Yes.

Q. Will you do that?

A. May I have the record? I don't know where it is.

Mr. Bristol: Do you want the six volumes of the Brooklyn Edison record?

Mr. Lane: He won't have to go through six; he only took three.

A. I haven't got the volume, it is in my room at the hotel.

Q. You don't recall whether that was there or not?

A. No, I don't.

Q. You talked about it about the same way you did before this court, didn't you? A. I presume so.

Q. And you know that from looking the record over recently, haven't you?

A. Not with respect to that, no.

Q. If I understood your testimony correctly yester-

446 day, you say that the Maytag machine and the defendant's machine operated substantially the same way in washing clothes, is that correct?

A. That is correct. May I change that, Mr. Lane. I think I have said that the Snyder machine here and the defendant's machine operate the same way.

Q. By Snyder machine you mean the one that is the replica of the Snyder patent substantially?

A. That I stated so, yes.

Q. So if I understand you now correctly, the machine which you say embodies the Snyder construction as shown in his patent operates the same substantially as the defendant's machine, is that correct?

A. That is correct.

Q. Now, will you refer to the Jardine patent of 1891 and count the number of times in which the word "dolly" is used to refer to the element there for washing clothes? Perhaps I can help you. In the fifth line is 1, ninth line is 2, thirteenth line again, twenty-eighth line, thirtieth, thirty-six, thirty-nine, forty-one, forty-five; page 2 line three, page page 2 line nineteen, line twenty-four, twenty-five, thirty-one, thirty-seven, thirty-nine, fifty-two.

A. You have pointed out to me seventeen lines in which the word "dolly" appeared in the Jardine specifications.

Q. They do appear in each of those lines?

447 A. I saw it in each of those lines.

Q. Do you recognize what has been recognized by the trade as the dolly type being a distinct type of machine?

A. No.

Q. Then I wish you would point out to the court any reference in the Jardine patent to the operation of the machine at any faster rate than was commonly used in connection with the dolly type machine for years prior to the Snyder invention?

A. The statement in the patent from which I infer the speed is the paragraph beginning at line 26 of page 1 of the patent in which it is stated "my invention relates to machines employed in the cleansing of linen, cambric and other materials which are liable to damage by being caught between the rim or bottom of the machine and the dolly and especially applicable to machines consisting of a circular tub or vessel with vertical ribs or projections on inner surface and of a dolly composed of a disc with an elongated boss or center carrying projecting ribs and caused to rotate in each direction alternately and reciprocally." That paragraph describes the type of dolly that this particular patent refers to, not as a peg dolly at all but as a bladed dolly of the disc type with high center post. The reference is to machines having that type of dolly already existing and well known in the art. I have described here this morning from the pat-

448 ents a number of such machines and there is an even larger number I should say. The patents and descriptions which I have read, which were not mentioned here this morning, so that this patent refers then to an established art of this kind of apparatus and the references to that art that I have read here this morning describe the results of opera-

tion of this type of dolly in this type of tub in words such as "violent agitation, tremendous agitation, violent commotion", that indicate the kind of result that it to be got in the tub when his kind of machine is operated.

Q. Now without going into a long dissertation, Professor, it is all very interesting but I just want you to point out specifically the only place in the patent on which you rely for anything as to speed?

A. I have now answered that question.

Q. Where is it so I could get it out of the rest of the maze?

A. On page 1 beginning line 26, and running to the end of that paragraph, line 31.

Q. And that is the only reference you find in that patent to anything concerning the speed of operation?

A. That is correct.

Q. What do you understand the inventor to mean by
449 the words "caused to rotate in each direction alternately and reciprocally"?

A. Oscillation.

Q. Do you understand them to mean simply oscillation by the rotation alternately and reciprocally?

A. Yes; I am confirmed in that opinion by reading the claims which relate to a "revolving or reciprocating dolly" and the reciprocation I take it is otherwise described at line 31 by "rotating in each direction alternately and reciprocally."

Q. Now, will you point out to the Court any part of that specification as distinguished from your theories, now, that states the objects of the ribs, A-1, of which I see 6 on the interior of the tub of considerable size?

A. I think there is no statement in the patent that describes the purpose of the ribs, A Prime.

Q. Is there any statement in the patent to indicate that these are not rub board or rubbing surfaces?

A. There is not.

Q. Is there anything in the patent to indicate that these ribs have no function?

A. You say is there anything in the patent to indicate—

Q. That these have no functions, the things shown there have no functions?

450 A. There is no statement with respect to function, as I said.

Q. Is there anything which shows from the face of the patent, from the disclosure, that these ribs do not effect the washing operation when the agitator is reciprocated instead of being revolved?

A. Yes.

Q. From the face of the patent I am talking about now?

A. Yes, on the drawing, the fact that the ribs are cut off at the bottom so they do not project down to the level which in the demonstration we saw they would have to project if they were to do any rubbing.

Q. I wish you would point out any part of the specifications as distinguished from your theory now—

A. (Interrupting) You want me to eliminate the drawing?

Q. Will you wait until I get through with what—with one question and save a lot of time. Let me finish my question. You are so hurried to argue with me you do not wait.

A. I would like to be able to tell you the truth.

(Last question read by the reporter as follows: "I wish you would point out any part of the specifications as distinguished from your theory now"—)

Q. (Continuing) Which indicates that the vertical ribs or projections on the interior surface of the tub have no functions?

A. Am I to divorce the printed text of the specifications from the drawing under the prescription of this question?

451

Q. I think if you will read my question you will get that divorcement very plainly indicated.

A. There is nothing in the printed text of the specification that indicates the purpose of the ribs.

Q. There is nothing in that specification that shows that these ribs do not effect the washing operation when the agitator is reciprocated instead of being revolved, is there?

A. There is nothing in the printed text of the specification that indicates that the ribs or baffles do not rub.

Q. Is there anything in the specification which says that the only rubbing that occurs is between the clothes and the agitator?

A. There is nothing in the printed text of the specifications that says that.

Q. Well, is there anything in the disclosure that, to your mind, makes it apparent that the patentee put those ribs in there without any purpose whatever?

A. No; there is very good evidence in the disclosure to me that the patentee put the ribs in there for the specific purpose of aiding the circulation of the water and fabrics in the tub and of not interfering with the fabrics in the tub and not rubbing and not interfering if the tub was run oscillatory while the ribs were there.

452

Q. Now, point out anything in the specifications that indicates anything of that kind from the specification itself?

A. Now, if you exclude in that the drawing—

Q. I said the specifications themselves as distinguished from the drawings?

A. I am afraid I am not sufficiently familiar with the terminology of the patent lawyer to know whether when you say specifications you exclude the drawings.

Q. I can give you a little education on that for the purpose of this discussion. Specifications means reading matter and the claims appended at the end, and the drawings are separate from them?

A. There is nothing in the printed text then that describes whatever this is you are inquiring about.

Q. Either the specifications or claims?

A. In the specifications or claims as printed and excluding the drawings.

Q. So that the only interpretation you have for those is what you think you see in the drawings at this late date?

A. No; it is what I see when I read the drawings together with the specifications and the claims.

Q. What is in there in the specification that you read
453 now that enables you to express an opinion with respect to the structure?

A. The specification describes an operation and apparatus in connection with the drawing. I have operated an apparatus constructed in accord with the specification; I have seen what happens and we saw it here in court. On the basis of the reading and the experimentation I know what occurs. I have described it.

Q. Did you ever make a machine exactly like the drawings of that patent and try to operate it by hand as indicated may be done by that drawing?

A. Well, I have made this machine with the ribs or baffles higher positioned as I described yesterday; I have operated it with a handle, manual operation, both oscillatory and continuous revolution and I have testified here of my experience with that kind of operation as well as with power operation as we saw it here.

Q. In the machine which you have here to demonstrate the Jardine device you have glass sides that are perpendicular, do you not? A. Yes.

Q. Is that true of the Jardine structure shown in Figure 2?

A. The tub shown in Figure 2 is slightly flared out, downwardly.

454 Q. In the Jardine patent the dolly is pivotally mounted on a small bearng immediately above the center of the tub, is it not?

A. It is thus shown to be mounted in this particular sketch of the apparatus.

Q. Is there any other showing in the patent than that?

A. There is no indication from the patent that this is a restrictive drawing.

Q. I am not asking that question, Professor. What I want to know is whether there is any other showing than the small pivot at the bottom of the impeller in this tub?

A. There is not in the drawing, no.

Q. Is there anything in the specific ns to show any change in that apparatus, per se at th oint?

A. I am afraid again I do not understand what your words mean. What do you mean "per se" there?

Q. Is there anything to say that that bearing could be changed in the specification anywhere?

A. Oh, I think that is definitely indicated by the general reference to machines of this particular kind in the art and the fact that the patent is concerned merely with this little stuff on the side to prevent catching.

455 Q. You have to support that statement only by the same reference that you made to the Jardine patent which was included in Lines 27 to 32?

A. Well, that is completely sufficient reference for me.

Q. I am asking you if that is the only place? That is all I want to know?

A. No. I would say that it is also found up in lines 3 to 5 and the immediately following paragraph states that this particular patent is directed toward the pins and ring that are to prevent catching.

Q. Your machine here exhibited don't have the rings as shown in that patent on which the entire patent is based, do they?

A. They have a model, as it were, of the raised structure that carried the ring but it is not the ring itself pressing up against the underneath side of the disc.

Q. I would like to get a direct answer to this question: Is there in the machine which you operated to represent the Jardine structure a rim and spring connection such as shown in the Jardine patent?

A. There is a rim; there is not a spring connection as I just described.

Q. Will you indicate what rim you mean when you are talking about that?

A. Yes, the structure below the disc in the Jardine impeller.

456 Q. Has it the rim above the impeller or approximately even with the top of the disc of Jardine in that structure that you represented?

A. A rim above the impeller?
Q. Whatever it is, marked C 1?
A. C 1 is not a rim above the impeller.
Q. Have you any such structure as the part marked C-1 in that drawing or the spring beneath it in that structure?
A. No.
Q. Why didn't you put that on?
A. A little more difficult to construct and no purpose whatsoever in showing the washing action in the Jardine machine.
Q. There is no need of using that spring connection in the Jardine patent when you would operate that machine at the speed you operated it there yesterday?
A. We did not catch anything under there yesterday, if that is what you mean.
Q. There is no need of any such construction as is claimed in that Jardine patent in the operation of the machine that you had and exhibited to the court yesterday, is there?
A. There was no need, yesterday, certainly.
Q. Well, is there any need at any time?
A. I don't know.
457 Q. You haven't found any need in any of your operations have you?
A. I have not had any difficulty with tangling, although we did loosen up that underneath rim the other day which may have been from catching.
Q. Why didn't you follow literally the drawings of that patent in making that machine for exhibition?
A. Because we did not think that apparatus underneath showed anything with respect to the washing effects and it was in order to investigate those washing effects that we built the tub.
Q. The patent of Eliza Jane Jardine shows that she felt there was a great deal of difficulty in operating the machine without those springs and rims that she patented, doesn't it?
A. With respect to one particular feature of the washing operation but not to the dirt removal feature; she was talking about the question of possible catching of the clothes which has nothing to do with dirt removal.
Q. Her patent is intended, as she says, to remove the difficulty which has been present in the operation of the machines without that kind of a device?
A. That's right.
Q. And the patent says that is what her attempt was,
458 to eliminate that difficulty?
A. That's right, to apply that to this particular known type of machine.

Q. And the claim and specification is directed almost wholly to that improvement which would eliminate the difficulties with the operations of the machine that she showed?

A. The specification first points out the type of machine to which the improvement is applicable and then it goes on to describe the improvement.

Q. There is no statement there of keeping the clothes in rapid or violent movement or circulation, roll-over throughout the tub of the machine, is there?

A. That is correct.

Q. There is nothing to show or suggest, in the specifications, the violent action of the water as can be produced in that machine?

A. Except in so far as the specification refers to the art then existent and the art describes the action.

Q. You bring that in—let us assume that that can be used every time but let us get down to this.

A. You broadened your question to say there is nothing in the specifications. If I am to answer you truly I must keep repeating this thing that I have said to you many times before.

459 Q. All right, if you want to repeat it but I just thought it would save time. There is nothing in the specification itself to indicate the violence of action other than the statement that you say generally refers to other machines, is there? A. That's right.

Q. Do you think that is the way the patentees write their specifications and things of this character?

A. I don't know about that.

Q. Now, in all of these tests that you have made before the Court there has been no soap in the water, I believe you said?

A. That's right.

Q. The water has been cold has it not, most of it?

A. Well, some of it has been warmer than others; in general I should say it had been of about room temperature.

Q. There has been no hot water used in any of these experiments, has there?

A. There has been hot and cold mixed put into the tubs.

Q. I mean hot water in the sense of getting it up anywhere near boiling water or anything of that kind? A. No.

Q. Just tepid water is about as close as you can call it?

A. It has been water ranging downward from about I would say one hundred ten degrees.

460 Q. And no soap used in any?

A. That's right.

Q. Were you present in the Court of Appeals when the case was argued there? A. No.

Q. You made no demonstrations in that court of any kind?
A. No.
Q. You have not washed any clothes in the presence of the court here, have you? A. No.
Q. You did not in the case before Judge Byers, did you?
A. I don't recollect.
Q You don't recollect that you did, do you?
A. I don't recollect either way.
Q. Now, turning to the Hermance patent, you made some statements to the effect that you had a turn-over of the water going up and down the sides of the tub. What do you understand the statement on the second column "These cleats being hollow the water is thrown outward by the centrifugal force, and then rushes in again through the open outer ends and perforations? A. Open outer ends?
Q. Open outer ends of the perforations?
A. Why the particular action that I understand to be described there is that when the impeller is thrown to a part of a revolution and stopped, as the impeller is moving,
461 water is caused to flow outward from the impeller and up along the sides of the tub until the level of the water along the walls of the tub is higher than it is in the middle.
Q. Will you quote any statement from the patent that indicates that?
A. I do not have to have a quotation from the patent. I know that is what happens when I move the impeller and what I am describing is what I understand by this particular phrase.
Q. Will you point out any statement in the patent that indicates the flow of the water as you have stated, up and around the sides and down and back again?
A. Am I supposed to have completed my answer to the last question?
Q. I don't know.
A. I have not, if you do not object. The water then is raised to a level higher on the edge of the tub. Now, at that point it will begin to flow down hill. When the impeller is stopped it will not only flow down hill but slosh backward along the walls and water that does that will tend, in part, to flow into the outer ends of the ribs. I understand that to be what is referred to by this particular phrase in the patent.

Mr. Lane: Just switch my question after that so as to
462 make it readable.

(Last question read by the reporter as follows: "Will you point out any statement in the patent that indicates the flow of the water as you have stated, up and around the sides and down and back again?")

A. I think there is no such statement.

Q. Now, this machine was for a mechanism to be operated by hand in the old fashioned wash boiler put on the stove, so they could move the clothes around while the woman was boiling her clothes on top of the stove, wasn't it?

A. I don't know.

Q. Isn't that what it indicates to you when it says "wash boiler"?

A. It says that it is to be—that the tub or the container is a wash boiler.

Q. The statement they have in the drawing is "A wash boiler", isn't it? A. Yes.

Q. The statement in the specifications says "The nature of my invention consists in the construction and general arrangement of a wash boiler"?

A. Yes, and the third line of the specification page says "An improved washing machine".

Q. A washing machine to be used as a part of a wash boiler, don't you understand that?

A. No, I understand it to be a washing machine, com-
463 prising a tub, and impeller and a driving means.

Q. I notice in the specification it says that the clothes to be washed are laid on the cleats or ribs bb of the wheel E?

A. That's right.

Q. "Said ribs holding the clothes up from the wheel, thus preventing them from clogging up the holes or perforations in the wheel, but allowing at all times a free passage of the water through the same"? Doesn't that indicate to you that all the circulation must be below the clothes?

A. No; the specification says there is to be tremendous agitation in the suds in the apparatus as the impeller is reciprocated rapidly.

Q. Where is that?

A. Beginning at the second full paragraph in the second column it says "The operation of my machine is very simple. The operator, by the use of the crank D, turns the wheel E, say, about ½ around, then back again, and so on rapidly from side to side, causing a vibrating or reciprocating motion of the wheel. This produces a tremendous agitation of the suds."

Q. About how rapidly would you think that a woman would operate that crank on top of a stove in a wash boiler in the normal operation by hand as there is shown?

A. Well, I would not know; you have got too many factors in there for me.

(Thereupon Court stood at recess until 1:30 P. M.)

464 Afternoon Session.

(Baltimore Hotel).

ARTHUR F. TAGGART resumed the stand for further

Cross-Examination.

By Mr. Lane:

Q. Professor Taggart, you have read the Snyder patent?

A. Yes.

Q. Which of these prior patents you have referred to most closely approaches the described operation of Snyder as disclosed in his patent in suit, in your opinion?

A. I would say the Doughty and Davis, the Jardine, the Davis, perhaps the Henin and the Hermance, all five of those describe or indicate operations that are like the operation of the apparatus of the patent in suit.

Q. My question is, which one of those patents you have referred to this afternoon most clearly approaches the described operation of the Snyder patent in suit?

A. In all of them the fabrics with the water in the tub when the oscillator is revolved goes outwardly, upwardly, inwardly, and downwardly, or in the case of the Davis, the reverse of that operation, under the impulsion of the impeller, and fabrics placed in the tub are impelled by the water and follow generally that path.

The Court: Would you say, then, Professor, that
465 there is no one of them that more closely than the others approaches the patent in suit?

The Witness: I think not, sir; they all do the same thing.

A. (Continuing) As the fabrics follow such a path they come in contact with the impeller, the fabrics are deformed by reason of such contacts and by reason of being dragged through the water and are thus washed; and that I take to be the operation to be performed by and described in the Snyder patent.

Q. Take the Snyder patent, will you please, now, Page 2, where it says, Line 19, "Due to the construction and arrangement of the tub, gyrator, and driving mechanism, this machine provides a decidedly new method of cleaning fabrics, in that while the clothes are washed thoroughly, this is done by the action of the water itself on the materials as distinguished from their being rubbed or drawn through the water by a dolly or other mechanism, or tumbled against the sides of the tub or rubbed against projections on the interior of the tub. In my machine the clothes are driven and swirled about in and by the water in the interior of the smooth tub. The materials never come in any substantial contact with

either the tub, or the gyrator which initially causes the agitation, seething and surging of the water on the interior of the tub. The peculiar movement of the water caused by the action of my gyrator in operation largely prevents rubbing the clothes against the container or gyrator and elimi-
466 nates the deterioration of the materials being washed by it." What one of the prior art patents most closely follows that statement?

A. That describes the action of all of the machines I have mentioned equally with its description of the apparatus of the Snyder patent.

Q. You think that each of the machines you have referred to in the prior art do what Snyder states there?

A. When operated in parallel with Snyder's, that is when you operate the Snyder with one or two pieces of light fabric so that there are insubstantial contacts of the fabric with the impeller, then that may be said to describe the action in the Snyder, and it similarly describes the action in each of the other machines when the other machines are similarly loaded. As you increase the load in the Snyder the contacts with the agitator increase. They do the same thing in the other machines. The other machines are exact parallels in action except in so far as there is variation by reason of differences in speed as they were operated here.

Q. If I understand you correctly, then, each of those prior art patents you have last referred to this afternoon anticipate that idea equally well in the disclosure of those prior patents?

A. I don't know if I know the meaning of "anticipate" as you use it, but each of these acts as it is operated
467 under parallel conditions on the fabrics exactly as the Snyder machine acts.

Q. I am talking about the description, now, and the specifications. Do I understand you to state that each of those machines shown in the patents you have referred to this afternoon equally embody as close an approximation to the Snyder disclosure as any other?

A. I should say so, yes.

Q. What machine of those you have discussed from the prior patents most closely approaches the Snyder construction, both as to the shape of the impeller, the spacing of the impeller, with respect to the side walls, the speed with which it is operated to substantially sustain the fabrics as disclosed in the Snyder patent, in your opinion?

A. The Davis, the Jardine in all of the respects that you have mentioned. I make that selection because of the fact that in those two the edge of the disk is spaced a substantial distance from the walls of the tub while in the Doughty and

Davis apparatus and in the Henin apparatus and in the Hermance as pictured, the edges of the respective disks are closer to the walls of the tubs.

Q. If I understand your answer correctly, we can assume that you consider in these regards the Davis patent and the Jardine patent as the ones which most closely resemble the structure of the Snyder disclosure as shown in his patent in suit?

468 A. Yes, I would think so. Yes, that is right. The Jardine has a center post higher than that shown in the drawing of the patent in suit.

Q. Do you know whether any structure like the Jardine was ever made or used, like that Jardine patent, commercially?

A. Yes.

Q. In commercial use? A. Yes.

Q. Where?

A. Right there on the stand, the defendant's machine, (Indicating).

Q. That is the only one that you know of that has the closest embodiment of the Snyder disclosure?

A. No, the Easy machine and the Snyder machine with the high center post. It doesn't have the wings up the side.

Q. Do you know of anybody that ever made or used commercially a machine embodying the complete structure of the Jardine disclosure?

A. Yes, the ones that I have named.

Q. Where in any of those machines is that mechanism for keeping the load of clothes from getting beneath the impeller?

A. I will except that. I do not know of machines that have that device, that particular device for preventing the catching of clothes.

Q. What machines can you call our attention to, used commercially, in which they had large ribs of the character shown in the Jardine patent in actual operation?

469 A. Well, the Easy had large ribs going up the center post.

Q. I am not talking about the center post; I am talking about the ribs around the tub.

A. Oh; the ribs around the tub aren't in the present day embodiment of the Jardine because of the fact that with oscillation they are not necessary.

Q. Will you tell me of any commercial use, any machine like that shown in the Jardine patent, with the impeller as there shaped, with the impeller as there mounted on the bottom of the tub on a little pivot. with the springs at the edge

of the impeller, with the large projections on the interior of the tub, being made commercially?

A. I do not know of any that has all of those elements.

Q. You do not know of any commercial construction ever having been made of the Jardine patent as shown in the patent drawings?

A. No, not specifically as shown in the patent drawings.

Q. Now, in your testimony in the Brooklyn-Edison case you testified that in the Jardine structure the clothes were rubbed, pounded, dragged, and squeezed in the operation of the machine, did you not?

A. That is probably correct.

Q. That is the fact, is it not?

A. That is probably correct; may I have the reference?

Q. Is that the fact, or not?

A. It is definitely the fact; yes.

470 Q. You also gave similar testimony, as I understand it, with respect to the Doughty and Davis machine. Is it a fact that in that machine clothes are pounded, rubbed, dragged, and squeezed in the washing operation?

A. That is correct.

Q. In the machine of the Davis patent is it a fact that you testified there also, as I understood it, that the operation is such as to rub, pound, squeeze, and drag the clothes through the water in the operation?

A. That is correct.

Q. I believe you made the same statement with respect to each of these patents that you have testified about today, in the Brooklyn-Edison case. Is it a fact that in all of these machines the washing operation depends upon rubbing, pounding, dragging and squeezing the clothes in operation?

A. Now what do you refer to as all of the machines I have referred to, today?

Q. This morning, yes.

A. That is correct, including the Snyder machine.

Q. And that is the teaching of each of the prior patents that you have referred to?

A. I think that is the fact with respect to operation. The teaching is as to different kinds of actions, of scrub-

471 bing, rubbing, dragging, dashing liquid against the fabrics in suspension, forcing liquid against and through and around the fabrics.

Q. My understanding is that it is your interpretation of all of these prior patent devices, that in each the contemplated action disclosed in the patents, as I understand it, is a dragging, pounding, rubbing, and squeezing of the clothes for the washing operation?

A. My idea of the washing operation is that the fabrics are rubbed by the impeller, that in that rubbing they are squeezed, that when they are struck that action can be described by the word "pounded", that each and all of them catch the particles, or catch certain of them, and drag them through the water as the result of which they are deformed and manipulated and thus washed; that the action of the impellers in all of them turns the fabrics over if they are bottom positioned, forces them to the side wall, up the side wall, across the top, and down and are thus brought time after time in contact with the impeller and into the cleaning zones of the tub.

Q. Your statement is applicable to each of the prior art machines that you have discussed?

A. Yes.

Q. Now, will you turn to the Ferguson patent, the Ferguson patent of 1868? This shows a series of vertical
472 ribs extending up the interior sides of the tub, very much like the Jardine patent, does it not?

A. No, it shows ribs on the side of the tub, but quite differently positioned from those in the Jardine patent in that they are not cut off at the bottom as they are in the Jardine patent.

Q. Is there any different action because of that cutting off, in your opinion?

A. Yes, quite. The fabrics are not as much interfered with in the Jardine patent, not interfered with in effect as respects those that are being dragged around on the impeller disk as they would be in the Ferguson patent machine.

Q. Now, in the Ferguson machine, the showing is of a crank for turning the impeller, is it not? A: Yes.

Q. By the way, what is the device that is used for the center of the tub called, do you know, in that patent?

A. No.

Q. Can you find out?

A. At the first full paragraph in the second column it describes the device that is in the tub. In other words, the dolly has a circular horizontal disk near the bottom of the tub, and also a series of vertical beaters "B".

Q. That device is mounted on a small pivot at the bot-
473 tom of the tub much like the Jardine structure, is it not?

A. Much like the structure that is diagrammatically shown in the Jardine drawing; yes.

Q. That is what I mean. The oscillating mechanism in that machine is contained in the cover of the machine, is it

not; that is, that part following the beveled gear at the end of the crank shaft?

A. It is in a bar, as I understand it from the description.

Q. A separate bar from the cover?

A. As I read the description.

Q. In that machine the only operation shown and described is that that beater is driven in one direction?

A. That is my understanding, yes.

Q. That it goes round and round?

A. That is my understanding, yes.

Q. Now, turning to the Groat patent, the patentee refers to that mechanism as a wheel, does he not? That is shown on the second sheet of the drawings.

A. A flange wheel, he calls it.

Q. He calls it a horizontally ribbed or flanged wheel, when he first mentions it?

A. I don't know the first mention of it, but about the 15th line you see he calls it a flanged wheel.

Q. With "horizontal" above it?

474 A. Yes, "horizontally ribbed or flanged wheel." A couple of lines below that he shortens the description to "wheel".

Q. In that disclosure parts "D" have an open end, do they not? A. Yes, as shown here.

Q. And then an open bottom and closed, arched top as described in the second column of that specification; is that true? A. That is my recollection; yes, that is right.

Q. And in between those beater members there is a raised portion with holes following completely around the sides of it except the side exposed to view?

A. Yes, the drawing shows the holes on one side. I take it they go all the way around.

Q. The specific reference to this in the middle of the second column is as follows, isn't it: "The wheel consists of a number of raised radial arches, ribs, or beaters, D, having open bottoms and closed arched tops, and rising from the webs, g, which are respectively inclined in opposite directions, and perforated at i for the free escape of water from below above the webs, where it will be acted by the ribs D and dashed among the clothes." Is that what it shows?

A. Yes, sir.

Q. The specification also says, "To prevent the articles which are being washed from passing through or closing the openings, i, I arrange a guard, E, over each one of

475 these openings, the sides, e, of which guard are inclined or perforated to allow a free circulation of water through the openings." What was the purpose of that as you understand it?

A. It is stated above for the free escape of water from below the webs where it will be acted upon by the ribs and dashed among the clothes.

Q. The inventor there contemplates the circulation of water through the impeller, does he not? A. Yes, I think so.

Q. That machine is a hand crank machine, is it not?

A. Yes.

Q. That was the only type of operation disclosed in these patents as early as 1871?

A. That is all that was disclosed in this patent. I couldn't say that as to the fact generally.

Q. Is there any that you have produced here that shows any other operation at that time or before?

A. No, I don't think so.

Q. Do you know of any washing machine ever having been made corresponding exactly to the structure shown in the Groat patent? A. Not corresponding exactly; no.

Q. Have you ever seen one made with the holes through which the water circulates freely in the impeller as stated in the specifications? A. Not like this; no.

476 Q. Do you know of any machine having been made commercially like the drawings of the Ferguson patent about which you have testified?

A. Not completely like the drawings, no.

Q. You never saw a machine actually commercially used with rib structures like that shown in the drawings with the beater at the bottom of the tub as there shown, extending up through the top and revolved by a crank, did you?

A. That is what I meant to say in my previous answer.

Q. Turning to the Runkle patent, a patent of 1872, I will ask you: In that structure there are vertical ribs around the interior of the tub, are there not? A. Yes.

Q. How many are there shown? A. Eight.

Q. And they extend up from the bottom of the tub out like this shown in the Ferguson patent we have already discussed?

A. Yes.

Q. And the operation of those, the purpose of that is the same, would you say, as in the Ferguson device?

A. I do not know as to the purpose; the operation will be the same.

Q. Now, in that machine the description speaks about that being operated, the dolly or whatever we call it, is

477 mounted on a pivot at the bottom of the tub, isn't that right? A. Yes.

Q. And there is a beveled gear at the top of the support for that mechanism? A. That is correct.

Q. And there is a gear meshing that gear on the top of that, operated by a crank which turned the mechanism in one direction?

A. That is the statement of the specifications.

Q. Again, it goes round and round as distinguished from the oscillations?

A. That is the way I interpret the word "revolution" here in the specifications.

Q. You think that structure meets the disclosed operation of Snyder's patent?

A. I don't know what you mean by "meets", Mr. Lane.

Q. Does the structure there shown and describe contemplate the operation disclosed in the Snyder patent?

A. It doesn't contemplate oscillatory motion.

Q. Does it contemplate the rest of the operation in the language as you understand it?

A. I think if you operate it with a load of clothes that is light the movement of particles will be similar to that in the Snyder machine, in that the fabric following the water current will pass outward at the bottom to the walls, up along the sides, in at the top, and down, and in contact with
478 the impeller will be acted upon in the various ways that I have specified that the impeller does act on the fabrics, and thus be washed.

Q. Point out in the specifications in that patent anything that sustains your theory?

A. That is not theory; that is a fact.

Q. Will you point out something that sustains your stated fact? I am speaking of the specifications now.

A. It is stated just beyond the center in the second column of the specification, "The circular plate Q is made smaller than the interior of the vessel A; and to its upper side are attached rounded projections, R, which act upon the water and clothes to throw them into violent commotion. To the inner surface of the sides of the vessel A are attached vertical ribs S, which operate, in connection with the projections R and rollers P, to throw the water and clothes into violent agitation and clean the clothes in a very short time." A similar phraseology is used to describe the operation in the Snyder machine.

Q. Is there anything in that description to disclose the operation of the violently flowing currents going outwardly, upwardly, inwardly, and downwardly, and cross-currents being created?

A. The currents are described in the specification as
479 "violent commotion", and "violent agitation". When the apparatus is run it must of necessity cause the wa-

ter to pass outward at the bottom, upward along the sides, inward at the top, and downward at the center.

Q. That is true, even though it is run in a continuous revolving direction, is it? A. Yes, indeed.

Q. You have referred to the Snyder patent which is of December 26, 1916. Mr. Snyder states in his patent, Page 1, Line 89, "In operation the dolly is placed upon the sleeve 16, and slides down thereon until the bottom of the collar 20 rests upon the pins 19 after which the water and clothes may be placed in the tub and the machine operated in the ordinary fashion, the washing blades 25 gripping the clothes to carry them back and forth in the tub and rubbing them against the corrugated sides thereof." Is that the action you think takes place in that machine?

A. I have operated a somewhat similar device and the fabrics are certainly gripped by the blades and dragged around through the water. They do not tend to rub against the sides; they tend to come in and hug the center post rather than be rubbed against the sides, and the only way you can make them rub against the sides is to stuff the tub full enough of clothes so that they can't draw across the chords of the arcs of rotation.

480 Q. Do you know what the manufacturers of washing machines during the period prior to 1921 advocated as to loads of machines? A. No.

Q. You do not know that the general tendency of advertising during all of that period was to get a machine that would wash as many clothes at a single time as possible?

A. No.

Q. Now, turning to the Davis patent, on Page 2 it is stated, first column, Line 1, "Thus the fabrics will be thoroughly cleaned without being pulled and distorted, the circulation of the water through the fabrics resulting in the removal of the dirt therefrom." In quoting that statement to you in the Brooklyn-Edison case, I asked you if that was in accordance with your understanding of the way that machine could operate, without being pulled or distorted, and your answer was, "No. I don't think any fabric can be washed without distortion of the fabric sufficient to force the water from between the threads." The next question was. "If I understand your testimony correctly, the clothes in the machine are washed if at all by rubbing, pounding, squeezing, and dragging?" To which you answered "Yes". Is that your understanding of the operation of the Davis machine? A. That is correct.

Q. Or the lack of operation?

481 A. My understanding of the operation.

Q. As you testified before?

A. Yes, by that method.

Q. By the method of rubbing, pounding, squeezing, and dragging as distinguished from mere circulation of water?

A. That is right, just as we saw it acting in the swishing of the fabrics back and forth in the water.

Q. Now, in the Brooklyn-Edison case you testified to the effect as I understand it that the eddying currents and other current irregularities were not prevented in the operation of the Davis machine, as stated in his patent on Page 1, Line 83 and following; is that correct?

A. May I have the reference, please, to what testimony you refer to?

Q. I just want to ask you if that is the fact?

(Whereupon the question was read by the reporter.)

A. That is the fact. I think I pointed that out last night in the operation of the Davis machine in the glass tub that there was the general outward, downward, inward, and upward circulation, but that the handkerchief turned around many times on a much shorter radius down about half way the side of the tub and near the wall indicating an internal eddy in that big general flow.

Q. Now, in the Davis patent it is stated, Page 1, Line 28,

"A still further object of my invention is to provide
482 means in connection with the agitator disk to prevent churning of the washing fluid." Do you think that is true of the operation of the machine made under that patent?

A. I would think so, yes, in that this little internal eddying I do not think would be called "churning". I suspect that what the patentee meant by the word "churning" was a totally undirected movement of the material, and definitely you don't have an undirected movement in that apparatus.

Q. Do you think the machine you have operated here in the presence of the Court churned the water or didn't it, that model of Davis' structure?

A. No, I think it caused a directed flow, interpreting "churning" as I have defined it.

Q. You think the construction of the disk shown in the Davis patent does prevent churning of the washing fluid? If so, I would like for you to state what it is that does that?

A. I think that the disk causes the circulatory flow of the water that I have described, by reason of the fact that the blade of the disk itself directs and confines the flow upward from the center, that is, impelled by the blades of the impeller, and that thus the disk does produce directed flow as distinguished from aimless churning.

Q. What is the particular part of that device that does that?

A. The disk and the radial blades.

483 Q. How is that different at all from the various wash-board machines that preceded the Davis machine?

A. What do you mean by the "wash-board" machines?

Q. I mean the rub-board machines.

A. Can you name one specifically?

Q. Yes, here is one of the Cooper patent of 1868, which I hand you.

A. I should say it differed materially from this because this appears to have a spring on the drive shaft above the disk to press the disk down, while in the Davis machine it is prescribed at Page 1, Line 23, that the disk shall float upon the water.

Q. Will you look at the rub board of that machine and compare it with the structure of the rub board or whatever you call it of the Davis machine?

A. The bladed disk. It appears to be circular, eight blades—I can't tell by looking at it the height of the blades. The blades are radially disposed, beveled at the outer end, brought somewhat to a point at the inner end horizontally—it is not indicated that they are beveled at the inner end. They terminate around a square button apparently at the center. They are all of the same length. In the Davis there are eight ribs, six shorter and two longer, disposed radially, beveled at the inner ends and not at the outer ends, equally spaced as they are equally spaced on that disk of the Cooper

484 machine. The height of the blades is indicated proportionately to the disc by Figure 1 of the Davis patent in diagrammatic fashion on the drawing.

485 Q. How, if at all, would the operation of the discs, assuming they are similarly mounted in the tub, between Davis and Cooper be distinguished?

A. Similarly mounted?

Q. Yes.

A. So that the disc in Cooper will float on the surface of the water?

Q. Yes, exactly.

A. I have got to read this specification. Are you going to say oscillatory motion of the same amplitude as in Davis or do you want to read the specification?

Q. Well, there is nothing shown in either of them, so let us forget that.

A. You mean if I float this disc that is shown in the Cooper specification in the same way that it floats in the Davis?

Q. If you mount it the same way as mounted in the Davis?

A. Yes; it will operate it the same way, I expect, except for the fact that because of the beveling of the inner ends of the blades in the Davis drawing there will be less tendency for the fabrics to catch at the inner side of the blades. We saw that in the comparison between the Miller impeller and the Davis impeller last night.

Q. I call your attention to a device that has been
486 offered in evidence, by circular, known as the Deitz rub board power washer, which has a sliding mechanism almost identical with that of the Davis patent and ask you whether that machine would operate in the same manner, in your opinion, as the Davis structure?

A. Well, I have not seen the mechanism. If that device has a floating agitator—

Q. Well, if it is on a sliding member—

A. (continuing) Arranged without any impulsion downward to oscillate, then when it does oscillate it will force the water outwardly along the surface, downwardly along the side of the tub, inward at the bottom and upward at the center and if fabrics are placed in it they will tend to travel with the water at rates that depend upon the amount of fabric put into the tub.

Q. If I understand your testimony it will operate substantially the same as the Davis operates?

A. Under similar conditions of operation?

Q. Yes.

A. Yes, under similar conditions of operation it will work the same.

Q. Weren't you familiar with this rub board type machine shown in the Deitz circular being sold for years?

A. No.

487 Q. The circular I have referred to is Plaintiff's Exhibit 6 C. Now, in the Davis construction as shown in his patent, 1,240,826, the agitator disc, as he calls it, is shown resting upon the bottom of the tub, is it not?

A. Yes.

Q. The disclosure is of a shaft for supporting and driving that mechanism marked 3 in the drawing, is it not?

A. Well, that is stated to be an indication of any manner of drive; the specification shows at line 60 with respect to the disc 2 "which can be driven in any manner desired as by means of a shaft, 3 connected to a suitable motor, not shown."

Q. I am speaking now of the drawing. That shaft extends upwardly from the agitator disc, does it not?

A. Speaking of the drawing only, it does.

Q. And that is not shown extending through the cover of the tub, is it? A. No.

Q. There is here in the room a machine which has been marked deposition Exhibit 2 A right over there, the wooden tub machine.

Mr. Bristol: I would be glad to have that marked for identification in this case Defendant's Exhibit 27.

(Tub referred to marked Defendant's Exhibit 27 for identification.)

488 Q. Will you look at that machine and see whether that embodies the structure of the Davis patent as you understand it?

A. Apparently it departs from the disclosure of the Davis patent in detail, in that the tub is shown ribbed on the sides and bottom—the tub of the Exhibit 27 is corrugated on the sides and bottom while no such corrugation is shown in the drawing of the Davis patent nor described in the specification. Also the impeller, while it has the longer ribs that are indicated in the drawing, Figure 2 of the Davis patent, has four of the shorter ribs, the longer ribs are not exactly radial. I suspect that is just an imperfection in construction. Those are the differences that I note on inspection.

Q. Well, is or is not that construction an embodiment in your opinion of the disclosure of Davis in his patent number 1,240,826?

A. It will act in the same way, that is to say the ribs have nothing to do with the washing in this type of machine and the departure of the two ribs from close radial positioning will not have any essential effect on the operation of the agitator.

Q. If I understand you correctly, the exhibit referred to, Deposition Exhibit 2 A is a substantial embodiment of
489 the Davis patent, as far as general construction and operation is concerned?

A. So far as the operation is concerned I have pointed out the difference in tub construction. The difference that I pointed out with respect to the impeller is of no importance in my opinion.

Q. In your opinion, if I understand your statement, the corrugations on the tub are of no importance so far as the operation is concerned, is that true?

A. That is correct.

Q. The larger number of ribs on that makes no difference in your opinion?

A. I should suspect it makes—It would give you slightly more impulsion of the liquid for a given degree of oscillation of the impeller I think, a different speed of oscillation

but will make no difference at all in the kind of action that the impeller performs.

Q. On that machine the fabrics would no more be thoroughly cleansed without being pulled and distorted than in the disclosure of the Davis patent, would they?

A. The fabrics there will necessarily be distorted in order to cleanse them.

Q. And the circulation of the water through the fab-
490 rics would not result alone in removal of the dirt from the clothes washed in it, in your opinion, as stated in the Davis patent?

A. The clothes will not be washed without distortion. There will be some contribution by the impeller in the ways that I have described for the Davis patent.

Q. In the Morse patent, the only contemplated operation is that of grabbing and holding the two handles or one handle at a time and swinging those back and forth by hand, isn't it?

A. The operation described is nearer the bottom of the first column: "So as to be capable of being moved therein with a reciprocating rotary movement by a person when hold of the handles A Prime of a lever, H, placed upon the upper prismatic part of the dasher-shaft". That, I take to describe the motor mechanism of this particular apparatus.

Q. That is the motor mechanism is the person?

A. That's right.

Q. In that machine the dasher is mounted on a pivot supported by the bottom of the tub, isn't it?

A. The agitator. Yes.

Q. What did you say?

A. The agitator, impeller, dasher. I just wanted to be sure we are referring to the same thing.

Q. I am referring to the specification where it speaks
491 of the dasher?

A. All right. That refers to this device composed of a disc, blades and center post which I have been referring to as an impeller or agitator.

Q. By the way, what was the date of that Morse patent?

A. 1870.

Q. Did you ever see a machine made like that for commercial use?

A. In complete detail you mean?

Q. Or in close resemblance to it?

A. Well, I have seen any number of the machines made with those general type of impeller tub, yes. So far as this specific form is concerned, no.

Q. What one was it that was like that impeller with the cross sticks and things of that kind on it that you say were made commercially?

A. Not any. I said that I had seen none specific in detail like this; that the general type is that that is represented in the defendant's, the Jardine apparatus here.

Q. What device did you ever see that had a number of posts stuck up around the driving mechanism, separated as they are there, to prevent clogging?

A. None other than this one.

492 Q. As a matter of fact, you have never seen a machine made like that machine or one that any mechanic would make to correspond to it?

A. Not in complete detail as I have said. In general form and action, yes.

Q. What one was made in general form and action like this one?

A. The Jardine, the defendant's, of those kind, in the room, comprising a disc, blade and center post.

Q. Mention specifically those that you think are like the Morse patent? A. In general form?

Q. I am talking about the closest resemblance you have got to that thing?

A. All right. The Jardine and the defendant's impellers.

Q. You think the Jardine is about the same kind of construction, as far as operation is concerned?

A. As far as the movement of fabric in water, yes.

Q. You think also that that is substantially like the defendant's, do you? A. Yes.

Q. Now then, turning to the Hanna, British patent of 1889, that was subsequent to the Jardine patent or ahead of it?

A. It is dated 1889 and the Jardine patent is dated 1891.

Q. Contemporaneous British patents, approximately?

493 A. They don't appear to be contemporaneous. There appears to be two years between them.

Q. Contemporaneously in the point of one hundred years?

A. You define that. I have given you the years, sir.

Q. All right. How many ribs are there in the interior of the tub of that machine? A. Eight are shown.

Q. Those are substantially like the interior ribs of the Jardine patent? A. No.

Q. How do they differ?

A. These run down to the bottom of the tub while the Jardine ribs do not run to the bottom of the tub. The Jardine ribs will not interfere with the circulation of the fabrics and will not constrict the lid and are raised where they cannot rub the fabric, which is not the case in the Hanna apparatus.

Q. It is your opinion then that the Jardine ribs do not rub the fabrics while those of the Hanna, if such circuits were made, would rub them?

A. No, I say the Jardine cannot rub; that is that Hanna could rub if you loaded the tub heavily, kept the water level low.

Q. Well, if you put as many clothes as you can comfortably get into the tub of the Jardine patent you mean
494 to say there would be no rubbing of the clothes on the ribs?

A. What do you mean comfortably get in? We loaded it in.

Q. A tub full of clothes in there?

A. We loaded it under a number of different conditions last night and the loads that we put in are recorded. Now, in loads up to and including 6 pounds there was no rubbing on the ribs. I don't recollect whether we had more than 6 pounds in there or not.

Q. That is, in your opinion, in the operation of the Jardine patent you get no rubbing on the ribs of the interior of the tub?

A. None that contributes any substantial part of the washing. I make that statement on the fact that I have operated the machine alike in all respects except that in one case the ribs were in and in the other case the ribs were out and the washing is just slightly better with the ribs out than with the ribs in.

Q. Do you attribute that to the water action or what?

A. I attribute that to the fact that if there is any real difference there, I won't assert that there is a real difference but if there is any real difference it is due to the fact that the ribs really make the diameter of the tub a little less than it is without the ribs and consequently that the turn-over of the fabrics is not as fast. We measured
495 the turn-over with the ribs out and the ribs in and the average rate is somewhat less with the ribs in so I have attributed what slight difference there is, if it is real, to that fact.

Q. Is there any substantial difference between the ribs of the Ferguson, Runkle and Hanna patents?

A. I think not.

Q. Did you ever operate a machine with ribs thus placed in the machine?

A. Running all the way to the bottom?

Q. Yes. A. No.

Q. So whatever you say about that question is purely theoretical?

A. Not in the slightest because while I have not operated a washing machine I have operated any number of apparatus for agitating fluids with ribs running to the bottom and know completely how the water flows in them.

Q. At any rate you never have operated one in the washing of clothes that is constructed in that way?

A. That is correct.

Q. Now, in that Hanna machine the contemplated operation is a continuous rotary one, isn't it?

A. Yes, I so understand.

Q. And the mechanism for driving it was evidently
496 a belt pulley of some kind, wasn't it? A. Yes, sir.

Q. And the disc was perforated? A. Very slightly.

Q. Well, it was perforated wasn't it? How many holes in it? A. It shows 12 small holes.

Q. Did you ever see a machine like that made commercially for any use?

A. No, not for one way rotation.

Q. Did you ever see a washing machine that was made and operated by continuous rotation of the commercial household type? A. You mean of this dolly type?

Q. This dolly type or whatever you call it? Anyone of these that grab the clothes, pull them around, drag them, squeeze them and so forth?

A. You mean any machine of the type we have on the platform? I have not.

Q. They have all been oscillating that you know anything about? A. Yes.

Q. Now, in the French patent, I did not quite get clear what you said about that bottom member. You spoke of it as a disc and that slats were put on to prevent the disc from warping. As a matter of fact that is a lattice work, isn't it?

497 A. I did not speak of it as you have characterized my answer.

Q. I wasn't sure; I wanted to be sure of getting it right?

A. I described it as a disc comprised of crossed slats so arranged as to prevent warping of the fabric. "A warping of the disc", that is the way it is described in the specification.

Q. The lattice work, as I will call it, is of substantially the same diameter as the interior of the tub, is it not?

A. It comes out near to the walls.

Q. Look at Figure 2. Isn't it just as close as it can be? And still operate in the tub as shown in Figure 2?

A. It comes close to the walls of the tub in Figure 2.

Q. Just as close as it could be practically, for operative purposes, isn't that true?

962

A. I don't know what you mean. I do know that I have operated a machine like that, that looked like that, and it worked.

Q. I am just asking you one thing. A. I know.

Q. Could you, as a mechanic, make the machine operate inside the tub without putting it into the tub structure itself and make it any closer to the edge than there shown, practically?

A. This comes very close to the edge, if that is what you want to know.

498 Q. That is what I do want to know? A. All right.

Q. Now, the bottom of the disc as you have called it is made of slats, crossed like a lattice, is it not? A. Yes.

Q. So there are square holes between each lathe, you might please call them, or slat?

A. Well, there are holes in it.

Q. Holes between each point where the slats overlap?

A. They are shown in the base, there are holes at the intersections of four slats.

Q. A thoroughly perforated base, in other words?

A. There are a lot of holes in it. The total percentage of the base that is occupied by holes as indicated here is not very large.

Q. Isn't it greater than the slats themselves?

A. I would not think so. I may be reading this incorrectly. No, I am not. The broad strips shown in the plan in Figure 4 are the slats. The narrow spaces, as it were, are the openings between them. That is seen very clearly by referring to cross section in Figure 2.

Q. What is the mechanism beneath the tub in that machine shown in Figure 3?

499 A. Oscillatory mechanism.

Q. Yes, but I am calling attention to the limit of movement?

A. Stated to be 120 degrees, one-third of a complete revolution.

Q. And the structure there is such as to limit the swing of the latticed disc to 120 degrees, isn't it?

A. That is correct.

Q. And the interior of that tub is corrugated, is it not?

A. Yes.

Q. And that structure is referred to in the first claim of the patent—I mean the latticed structure, as a beater?

A. In the translation that I now have before me it is referred to, the wings are referred to as beaters.

Q. Is it your opinion that that structure operates in the manner described in the Snyder patent, particularly that portion to which I have called your attention?

A. It is my opinion that it does so to precisely the same extent that the Snyder machine does.

Q. Does it carry out the explained, described operations of Snyder?

A. Well, it does so in the way that this does. Now, I am judging as to what that particular paragraph of the specification means by reading it in connection with the ap-
500 paratus pictured in the drawing which is on the stage before me and the operation of that apparatus as I observe it. Now, insofar as it is, as that paragraph describes the operation of that machine it likewise describes what takes place in the Henin apparatus.

Q. Do you think, regardless of all this explaining, that the mechanism described in the specifications and claims of the Henin patent is one which carries out the operation described and claimed in Claim 23 of the Snyder patent, and divorce your mind for a minute from all the rest of the material,—and embodies that structure?

Mr. Bristol: That is a good full question.

A. As respects Claim 23 the answer is yes as regards the method and no as regards certain parts of the structure, namely, that the interior surface is corrugated and if the "free from rubbing projections" of the claim is meant to describe corrugations, then there is departure. If it is meant to describe something that actually rubs then there is not departure because there is not rubbing in the operation, on the walls or bottom of the tub in the operation of the Henin machine.

As respects the area of the disc, the disc in the Henin machine is not considerably less than the horizontal cross-section of the tub nor is the margin of the base spaced a substantial distance away, if substantial is to be read as a large
501 or considerable distance away.

Q. Is there anything else in Claim 23 that you see?

A. Otherwise it seems to me that Claim 23 describes the Henin as well as it does the machine here that is labeled Snyder.

Q. Will you point out what specifications of the language of the Henin patent, limiting yourself to the language that shows any contemplation of the rapid turn-over of the water or the violent currents or the substantial suspension of clothes in the water or anything else that is similar to the disclosure of Snyder in the matter that I talked about. I am not limit-

ing it either to the translation or the original text of the French patent?

A. The translation describes in the first paragraph "Oscillatory motion with manual or power driven operation".

Q. Is that the only reference to anything that indicates speed, violence of flow?

A. Would you mind not interrupting?

Q. I thought you were through.

A. The thing that such power means is meant to drive is described in the paragraph that begins at the bottom of page 2 "The member known as an agitator" and the detailed construction of that is given in the following part of that paragraph and the first part of the next. Then near the
502 bottom of page 3 it is stated that the ribs and vanes are in there for the circulation of water; at the top of page 4 it is stated that the extent of the oscillatory motion and the purpose of the apparatus is set up to be for washing clothes, washing machine of the hand operated or motor driven type, and a washing machine in the first page of the patent, and so forth. In line with this specification and with the drawing I constructed such a machine and operated it and know, therefore, how it must operate in order to wash clothes.

Mr. Lane: Move to strike the last part of the answer out as not responsive. I simply asked him to point out from the specifications what it said; that seems to me to be improper.

The Court: Sustained.

A. I have given, then, the material in the specification that describes the apparatus and the way that it has to be operated insofar as I find it therein.

Mr. Lane: I move to strike that out as already covered.

The Court: Overruled.

Q. Is that the only thing you can find to support your contention there is a disclosure of violent movement of the water, and suspension of clothes, in that Henin patent?

A. That is what I find that describes to me the con-
503 struction and operation of that machine. I find nothing in the specification that describes the action of the material therein other than as I have noted in the term "circulation."

Q. The term "circulation" is the only thing that indicates that?

A. Circulation of the water; that is the phrase that is used to describe the action inside the tub so far as I find it.

Q. And that is the only thing is it?

A. That is all I find, yes.

Q. Now, will you turn to Figure 1 of that patent. In that drawing there is a hand crank mounted on the same shaft as the pulley wheels, isn't there? A. Yes.

Q. So that when you desire to run it by power instead of by hand, get tired of operating it that way, the same shaft is operated as is operated by hand, is that correct?

A. The same shaft is operated, that is right.

Q. And the hand crank wheel revolves with the pulleys?

A. I did not think that that was true.

Q. Well, is it true or not?

A. I think the specification prescribes that to be taken off. Just a minute.

Q. It is also shown in Figure 3 and Figure 4, as I see
504 it, that same hand wheel with connections, with the pulleys, Figure 1?

A. It says in the last paragraph before the resume "The dimensions of these pulleys are such that it is always possible to actuate the machine either by hand or by power, by removing the belt or the crank handle, respectively.

Q. Yes, but what I am driving at, it does not make any difference about the crank handle?

A. I thought that was what you were inquiring about.

Q. No, I am talking about the wheel crank, that is the wheel to which the handle is attached. That always stays on the shaft, doesn't it, whether you operate it by hand or by power? A. Yes.

Q. So what you have read just indicates you may take the handle off but you do not take the whole wheel off and there is no contemplation of that kind, is there?

A. I don't think so.

Q. So that one operation, the power operation is treated in that patent as equivalent to the hand operation, is it not?

A. It is considered as alternative to a hand operation.

Q. And there is nothing to indicate that the machine is operated at any different rate of speed by hand or by power, is there? A. No.

505 Q. I call your attention to an illustration of a machine on the Plaintiff's Exhibit 16 A which shows an activator. Assuming that the activator is placed in the machine how, if at all, does it differ in general operation from the machines which you have operated here as Defendant's machine?

A. I would not expect that it would differ essentially.

Q. That is, it is substantially the same construction and operation in your opinion? A. Yes.

Q. Assuming that a similar activator is placed in the drawing shown in Plaintiff's Exhibit 16 B, in the machine shown in the cuts Plaintiff's Exhibit 16 B, would it operate in substantially the same manner as the defendant's machine which you have operated here?

A. If it is operated in the same way.

Q. Well, assuming that the same kind of activator is in as shown in the last illustration I showed you, and placed in the machine shown there?

A. And operated at the same rate and so forth?

Q. Yes.

A. It will, in my opinion, operate in the same way as in the machine marked "Defendant" on the platform.

Q. You refer to Defendant's Exhibit 17?

506 A. Yes.

Q. In my question I was referring to the cut of the activator as shown in Exhibit 16 A about which I asked you in the preceding question?

A. That is what I assumed.

Q. I call your attention to three cuts which I will mark A, B, C, and D and ask you whether those cuts show in fairly accurate detail, structure similar or substantially identical with Defendant's Exhibit 17? What I am asking you about is this one here (indicating on exhibit).

A. The only one that shows any detail at all of that, substantially in detail, is the one that is marked C. The others are mere diagrammatic representations of an impeller in a tub with some lines that indicate some one's ideas about what happens in the tub.

Q. What is the one that you say is the most accurate? How does that correspond with the Defendant's Exhibit 17?

A. Well, I did not say that anyone was the most accurate. I merely said that the only one that has any kind of detail at all is the one C and that is, I take it, a photograph taken of a machine with a glass tub. That particular structure has the impeller and glass tub and looks much like the Defendant's Exhibit 17.

507 Q. Substantially identical with it, isn't it?

A. I think I have said what I mean, that it looks much like.

Q. Would you say it was substantially identical with it?

A. Why no, I don't think I would. I have said as much as I can say from looking at that and looking at this.

Q. Calling your attention to the one marked A of this Plaintiff's Exhibit 16 E, about which I have been questioning you in the last two or three questions, how does the construction of the tub and the placement of the activator in it cor-

respond with the construction you see there in Defendant's Exhibit 17?

A. The tub is indicated to be circular, cylindrical and the impeller to be placed with the disc near the bottom, centrally.

Q. How does that correspond? Isn't it substantially identical, Professor, without spending a lot of time, with the construction that you see now in Defendant's Exhibit 17?

A. There is no structure shown in this drawing A as a structural drawing. There is indicated, as I have said, a tub and an impeller and they are indicated in the same relations to each other that they exist in that glass tub.

Q. Just hold that up and see if that is not substantially what you see as you look at that tub there now?

508 A. Yes, that is true.

Q. Then isn't it substantially identical with, so far as it discloses the construction?

A. It does not disclose any construction, sir,—structure. It discloses a diagrammatic sketch of a tub and an impeller.

(Counsel hands exhibit to the Court).

Q. Now, looking at the Exhibit Number D—I mean this Exhibit 16 E, the part that I have marked D, doesn't that show substantially the same thing as far as you can see, as is represented in Defendant's Exhibit 17?

A. It indicates a tub and an impeller that look like those in Defendant's Exhibit 17 and are similarly spaced. It also shows some liquid flow lines that are in there that are not, of course, a part of the structure.

Q. I was not talking about those; I was just talking about the structure?

A. You referred me to the picture, sir.

Q. My question is again, I asked you with regard to the three little prints on the middle of that sheet and limit your answer to structure. Aren't those substantial reproductions of what is shown in that Defendant's Exhibit 17 so far as the tub and activator is concerned?

A. Each of them, so far as the tub and activator is
509 concerned show the same type of activator, similarly positioned.

Q. Isn't that true of all the cuts on the page?

A. Thus described and limited, yes.

Mr. Lane: That is all.

Redirect Examination.

By Mr. Bristol:

Q. Professor Taggart, this Miller smooth tub machine, Defendant's Exhibit 19, was brought from the back of the

room up to the front of the room by being wheeled along on a little platform that has four casters under it. Do you know the common name for such a platform?

A. Dolly is one of the names.

Q. That is not anything like a peg dolly in a washing machine, is it? A. No.

Q. Nor is it like an agitator in a Jardine machine?

Mr. Lane: Objected to as leading and suggestive.

The Court: Overruled.

A. No.

Q. Mr. Lane asked you as to the prior art machines, which you demonstrated here, the Doughty and Davis and the Jardine, whether they did not operate by rubbing and pounding and squeezing and dragging the clothes through the
510 water. He refrained from asking you the same question about the machine of the Snyder patent and I would like to ask you the same thing about the machine of the Snyder patent?

A. It acts in the same way so far as my observation is concerned as the others; that is to say by rubbing and scrubbing, pounding, insofar as when the blade hits the mass it pounds, and dragging with the accompanying deformation of the fabric as it is pulled through the water just exactly the same way as in the other machine.

Q. Mr. Lane asked you whether the machine shown in the Henin French patent performs the operation and contains the structure described in the Snyder patent and claimed in Claim 23. I would like to ask you the same question with regard to the machine of the Jardine patent?

A. I should say that that claim described the Jardine apparatus both as to structure and method of washing.

Mr. Bristol: That is all.

(Witness Excused).

The Court: Call your next witness.

Mr. Bristol: I have to identify some of these prior art machines and since those are handled by the depositions of a number of witnesses I will ask that the machine which has previously been marked Defendant's Deposition Exhibit 21 in this case be marked for identification now Defendant's Exhibit 28. I will say this is the Miller corrugated tub machine.

511

I also ask that the machine which is here in this room and has been marked Defendant's Deposition Exhibit 4 in this

case be now marked for identification Defendant's Exhibit 29 and will state that this is the specimen of the 1900 Company's Form 4 machine which was referred to in the deposition. The 1900 Company Form 1 machine, the old, decrepit wooden tub machine has already been marked Defendant's Exhibit 27 in this case.

There is one more machine here which has been previously marked Defendant's Deposition Exhibit Number 8 and I ask that this now be marked in this case Defendant's Exhibit 30 for identification. This last machine is an experimental machine which was used in the development of products of the 1900 Company.

(Machines referred to marked Defendant's Exhibits 28, 29, and 30 for identification).

Mr. Bristol: I will offer those machines in evidence at the time that the depositions are read, to establish their authenticity, and other than that I think we have no need to
512 continue here, if your Honor would prefer to go back to the court room.

The Court: We will recess for twenty minutes and reconvene in the court room.

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513 (Thereupon, pursuant to recess, court reconvened in the court room of the United States District Court.)

Mr. Bristol: As I previously mentioned, the Doughty-Davis patent, No. 1496305, was issued on June 3, 1924, which is subsequent to the filing of the application for the Snyder patent in suit. The Doughty-Davis application, however, was filed in the Patent Office on April 28, 1922. That was prior to the filing of the Snyder application. I now offer in evidence a certified copy of the petition, specification, oath, and drawings as originally filed on April 28, 1922, for the Doughty-Davis patent, as Defendant's Exhibit No. 31.

(Defendant's Exhibit No. 31 was marked and received in evidence.)

(Defendant's Exhibit No. 32 marked for identification.)

I now offer in evidence a certified copy of the Findings of Fact and Conclusions of Law made June 8, 1937, by Judge Coxe in the Southern District of New York in the cases of The Maytag Company vs. Easy Washing Machine Corporation and The Maytag Company vs. Hurley Machine Company and Electric Household Utilities Corporation. These are

Findings of Fact and Conclusions of Law in a case involving the same Snyder patent here in suit, holding claims 23, 26 and 29 of that patent invalid. I offer this as Defendant's Exhibit No. 32.

(Defendant's Exhibit No. 32 received in evidence.)

(Defendant's Exhibit No. 33 marked for identification.)

I also offer in evidence a certified copy of the final decree in the case of The Maytag Company vs. Easy Washing Machine Company, bearing date of June 8, 1937, in which the District Court for the Southern District of New York
514 adjudged that Claims 23, 26, and 29 of the Snyder patent here in suit, were invalid, and dismissed the bill of complaint, as Defendant's Exhibit No. 33.

(Defendant's Exhibit 33 received in evidence.)

(Defendant's Exhibit No. 34 marked for identification.)

Likewise I offer in evidence as Defendant's Exhibit No. 34 a certified copy of the final decree in the case of The Maytag Company vs. Hurley Machine Company and Electric Household Utilities Corporation, entered June 8, 1937, to the same effect as the decree in the Easy case.

(Defendant's Exhibit No. 34 received in evidence.)

(Defendant's Exhibit No. 35 marked for identification.)

I offer in evidence a certified copy of the history of the prosecution of the application which resulted in the patent in suit, and with it a copy of each of the patents cited by the Examiner in the Patent Office during the course of that prosecution, as Defendant's Exhibit No. 35.

(Defendant's Exhibit No. 35 received in evidence.)

Mr. Lane: Is that a complete file wrapper?

Mr. Bristol: It is a file wrapper of the application. It hasn't got the interferences in it.

(Defendant's Exhibit No. 36 marked for identification.)

In order that this Court may be informed, if it desires to be informed, as to what was before the District Court and the Circuit Court of Appeals in the case of The Maytag Company vs. Brooklyn-Edison Company, Inc., I offer
515 in evidence as a physical exhibit as Defendant's Exhibit No. 36, but not as proof of the truth of any statement therein contained, a copy in six volumes of the printed record on appeal to the Circuit Court of Appeals in that case.

Mr. Lane: I object to that, Your Honor. I have no objection to having you see it, of course, or to having it marked for identification; but I do object to the offer of it in evidence which requires us to take up such things as that if it ever gets beyond this Court.

The Court: It will be received for the consideration of the Court, but not as a part of the evidence in this case; exception allowed to the defendant.

Mr. Lane: I understand it is not to become an exhibit but is simply marked for identification.

The Court: That is all.

Mr. Lane: Can't we understand it, I do not understand you can bring it in as a physical exhibit. It is merely marked for identification.

The Court: It was my understanding that it was marked only for identification, and it will be so marked.

ALFRED E. BOBST, of lawful age, being produced, sworn, and examined on the part of the defendant, testified as follows:

Direct Examination.

By Mr. Bristol:

I am Alfred E. Bobst, reside at Schenectady, New York, and am a patent attorney with the General Electric Company, Schenectady, New York. I have been connected with
516 the patent department of the General Electric Company since 1913.

I have seen this advertisement of a General Electric washer which has been marked Plaintiff's Exhibit 16A in this case, or a similar one, some time before this case. The first I recall was along the early part of December, 1932.

Q. Did you take any action with regard to advertising such as this containing statements to the effect that the G. E. activator washes by water action alone and that the clothing gets a thorough scrubbing on a wash-board of clean soap-suds?

A. Yes, sir; as soon as I noticed those statements in our advertising literature I took the matter up with David Hays, who was the commercial engineer of the washing machine division and requested him to immediately take steps to see that such advertising statements were taken out of our literature.

I know that he did take such steps. I was in Bridgeport on December 2, 1932, and discussed this matter personally with Mr. Hays, and Mr. Hays in my presence wrote a letter to J. M. Wicht, who was sales manager of the washing machine division, and after I had approved the letter it was sent along requesting that advertising statements of this kind be taken out of our material. I have the context of that letter; I have a copy of it here. That is a carbon copy from the regular files of the General Electric Company. I saw the original letter at the time it was written and before it was sent out by Mr. Hays. This particular carbon copy I obtained from the files in Bridgeport fairly recently.

517 (Defendant's Exhibit No. 37, a letter, marked for identification and received in evidence.)

Q. Mr. Bobst, on the advertising circular which has been marked Plaintiff's Exhibit 16 A there is a representation of the G. E. double tub washer. Can you state by whom such double tub washers as are sold by the General Electric Company are manufactured?

A. They are manufactured by the Easy Washing Machine Corporation, Syracuse, New York. That is the same Easy Washing Machine Corporation that was a defendant in a suit for infringement by the Maytag Company in the Southern District of New York. The model numbers which identified the machines manufactured by the Easy Washing Machine Corporation and sold by the General Electric are 2G and 3G.

Cross-Examination.

By Mr. Lane:

That letter is dated December 2, 1932. The Maytag Company notified the General Electric Company of infringement shortly after the patent issued. It was some five months after we received the notice of infringement that we withdrew the statements made in these circulars; that is the first I had noticed the statements. I read the patent prior to the time I sent out this information.

Q. Is the direction sheet which is here in evidence as Plaintiff's Exhibit No. 16 B containing these statements, "Place washing in the tub while the Activator is in motion; distribute uniformly. Better results are obtained by
518 washing smaller quantities of clothes for shorter periods of time than by crowding the machine with large loads. The former method will produce the same results in much less time. The washing time required depends entirely upon the condition of the clothes. For proper washing action the clothes should be turning over freely in the water"; is that the kind of advertising put out for that machine?

A. I don't know.

Q. You do know that this advertising that is contained in this General Electric washer advertisements in "Better Homes & Gardens" was put out by the General Electric Company's advertising department?

A. I don't know about this specific piece of advertising. Some advertisements with those statements in were put out.

Q. They were quite generally distributed throughout the trade in connection with the sale of General Electric machines?

A. Prior to that time.

Q. And all of the General Electric washing machines operate on substantially the same method or plan and construction?

A. Yes, that is correct.

Q. So that any statements made concerning the one shown on this exhibit, Plaintiff's Exhibit 16 A, would be equally applicable so far as applicable to all machines of the General Electric Company?

519 Mr. Bristol: I object to the question as involving a very broad range and something upon which a witness should not be asked to place a blanket endorsement. It implies an endorsement of the statement of this circular.

The Court: Overruled; exception allowed.

A. Yes, the statments would apply to all of them.

Q. I call your attention to this Plaintiff's Exhibit 16 and ask you if that shows one of the General Electric washers?

A. Well, all I can say is this is signed by the General Electric Company, so I presume it is one of their machines, but so far as having actually seen this before to identify it, I can't.

Q. Well, you talked to the advertising agent, didn't you?

A. No, sir.

Q. You communicated with him? A. No, sir.

Q. Who is this Wicht that you talk about?

A. Mr. Wicht is the sales manager on washing machines.

Q. And he was the one that authorized the putting out of this advertising?

A. That I don't know.

Q. You went to him to get him to stop it, didn't you?

A. No, I went to Mr. Hays.

Q. What is the relation of Mr. Hays to Mr. Wicht?

A. Mr. Hays is the commercial engineer on washing machines and Mr. Wicht is the sales manager of washing machines.

520 Q. And I assume that Mr. Hays and Mr. Wicht together have been responsible for getting out this advertising material that you put a stop to, isn't that the fact?

A. I don't know as to that.

Q. Isn't that the way it is usually done?

A. I don't know; I am not in the advertising department and have nothing to do with it.

Q. Did you call specific attention to the cancellation of statements like that contained in Plaintiff's Exhibit 16?

A. Which statement do you have reference to?

Q. Any of them up there?

A. Well, this was not published until October, 1934.

Q. So that you did not stop that?

A. So I did not make any stopping as regards that.

Q. I am calling attention now to Plaintiff's Exhibit 16 in which it says in connection with these washing machines: "New. It leaves buttons on, no more scenes like this. The New G-E Washer is most remarkable of all because of the way it washes clothes. In a few minutes, it can prove to you that the rubbing and pommeling methods of 3,000 years have been wrong. Clothes don't have to be worn out before their time. See the almost miraculous way the exclusive G-E Activator forces suds through fabric, makes suds and water currents do all the work." Was that issued after you sent that letter out?

A. Yes, this was issued in October, 1934.

I cannot say that it was the general policy of the General Electric Company to issue repeated statements of a
521 similar character after I cautioned them to the contrary effect; I don't know. I don't know whether the General Electric Company furnishes the General Electric Supply Corporation with advertising material.

(Witness Excused.)

(Book of Wooster, Greene, Davis, Quinn, Doughty, Behan and Osgood Deposition Exhibits marked Defendant's Exhibit 38 for identification.)

(Book of Barnhart, Lint, Jenkins and Miller Deposition Exhibits marked Defendant's Exhibit 39 for identification.)

Mr. Bristol: I also offer in evidence as Defendant's Exhibit 40 an aluminum agitator which has been previously marked Defendant's Deposition Exhibit C which is identified in the deposition of John N. Lent, called in Meyersdale, Pennsylvania.

Mr. Lane: Object to that for the reason that it was not proved to have been made prior to the Snyder application, in-

competent, irrelevant and immaterial, no bearing upon the issues.

The Court: Overruled, exception allowed.

(Document and agitator marked Defendant's Exhibits 39 and 40 for identification.)

Mr. Bristol: I believe the originals of the depositions of all of these witnesses to whom I have referred are on file with the Court and I offer them in evidence collectively as Defendant's Exhibit 41.

(Depositions marked Defendant's Exhibit 41 for identification.)

522 Mr. Lane: Perhaps I may not have made my last objection clear, from the way you ruled on it. The testimony shows on its face, and I do not believe there is any contention made on the other side, that it was made prior to the Snyder invention but this was long after Snyder filed. It is their witness who testified and only one man testifies that he made the thing after Snyder filed, which for that reason is not competent evidence to be here at all.

The Court: I cannot rule upon the objection very intelligently without hearing the reference to the exhibit in the deposition.

Mr. Lane: Could I save the ruling if you will?

The Court: Ruling will be reserved upon that objection and the exhibit will be received subject to the objection.

Mr. Bristol: I think we can dispose of it without further [adieu] upon this statement. The witness was in the business of making washing machines; he testified that he had been engaged in designing a washing machine and he did design a washing machine which had an aluminum tub and this agitator which has been marked Defendant's Exhibit 40, and all of this was before he had any knowledge of the existence of any Maytag machine made in accordance with the Snyder patent, the Maytag gyrator machine. He had just about got this machine of his finished, ready to go on the market, when one of his associates, the witness William S. Miller suddenly saw a Maytag machine being brought into town and he came to him and said "Somebody has got the same sort of
523 thing that you have been working on." Now, I concede that the date of the making of this agitator, Exhibit 40, was later than the filing of the Snyder application; I concede that readily. It is offered to show that entirely independent of Snyder, Lint developed this thing which we

have identified here and before the Court, quite independently of any knowledge of Snyder and at about the same time. It is not offered as an anticipation of the patent in suit.

Mr. Lane: I cannot see how it is material at all to show that somebody else did not know.

The Court: I do not think it is material. The objection is sustained.

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524 VERNON J. WOOSTER, a witness for the defendant. Testimony taken by deposition at New York, October 18, 1937.

Direct Examination.

By Mr. Bristol:

A. My name is Vernon J. Wooster and my present residence is 915 Michigan Avenue, St. Joseph, Michigan. I am employed as draftsman and designer for the 1900 Corporation. In about January, 1934, my residence was 7 Genesee Avenue, Binghamton, New York. My business connection at that time was the same as it is now: draftsman and desinger for The 1900 Corporation.

I am the same Vernon J. Wooster whose deposition was taken at Binghamton in January, 1934, in connection with a suit by The Maytag Company against the Brooklyn Edison Company. I have no connection either with The Maytag Company, plaintiff in the present case, or the General Electric Supply Corporation, defendant in the present case. I have no financial interest in the outcome of this suit, or any other interest.

I have at your request produced a file of original drawings from The 1900 Corporation; this group here. They are detail drawings of parts and assemblies of the submerged agitator machine. When I say the "submerged agitator machine" I mean a machine made by The 1900 Corporation. It was made about early in the year 1921. That is, during the years 1921 and 1922.

These drawings which I have produced here were taken out of the file in the Engineering Department at St. Joseph, Michigan, of the company, The 1900 Corporation. They
525 were formerly filed in the Engineering Department file of The 1900 Corporation at Binghamton, New York. That is, the same corporation has two different plants, one at Binghamton and one at St. Joseph, Michigan.

I, myself, had something to do with the making of some of these original drawings. I made several of the drawings that

are in that group there (indicating), which are signed or initialed by me. Of the other drawings in the group, there were several made by Mr. Greene and several by Mr. Martin. Mr. Greene's full name is William A. Greene, I think, and he is employed in The 1900 Corporation also; still employed by The 1900 Corporation. He is the Mr. Greene who is in this room.

Mr. George L. Davis was connected with The 1900 Company back in 1921 and 1922; he was then superintendent of the Binghamton factory. Mr. Davis is in the room now.

I am acquainted with Mr. Herman W. Doughty. He was connected with The 1900 Company in 1921 and 1922; he was the engineer in charge of designing. He had something to do with my work in connection with the making of these original drawings which I have produced; he was in charge of all the designing. We did all the work through his instructions. I saw him from day to day; he was in constant touch with us.

I will go through this group of drawings which I have produced, and read off the numbers of those which I prepared myself. There is one layout here of a submerged agitator
526 motor and gear case. There is no drawing number. It is dated May 19, 1921. That was made by me. It was made the date that I have on this drawing.

There is a drawing of a layout of an agitator support, part No. 871, drawn 1-10-22; there is no drawing number.

Drawing of a base, part No. 801, dated 8-19-21. By the way, that is a machine drawing.

Drawing of a wringer gear case, a casting drawing, part No. 805. That is dated 4-12-21.

Cover for tub, part No. 848, dated 7-28-21.

Gear case, Sheet 3, part No. 802, dated 6-27-21. That is a machine drawing.

Gear case casting drawing, Sheet No. 5, part No. 802, dated 3-6-21.

Gear case casting drawing, Sheet No. 4, part No. 802, dated 6-2-21.

Gear case casting drawing, Sheet No. 3, part No. 802, dated 6-2-21.

Agitator support, part No. 871, dated 2-3-22.

Short wringer gear shaft, part No. 815, dated 4-5-21.

Pipe standard for wringer, part No. 816, dated 5-4-21.

Clutch lever, machine drawing, part No. 809, dated 6-16-21.

Agitator retaining thumbscrew, part No. 833B, dated 5-5-22.

Sketch of splined agitator Shaft and Spider as machined for retaining thumbscrew, sketch No. 528, dated 5-6-22.

Long Wringer Gear Shaft, part No. 825A, dated 5-13-21.

That is all that were drawn by me. I identify these drawings as having been drawn by me because, when we
527 complete the drawings, we sign them with our initials, as drawn by us, and I found my initials on the drawings which I have just listed. My initials are V. J. W.

As to the dates when these drawings were made, we put the dates on at that time, when we finished the drawing and complete it. So that the dates that I have read off are the dates when each one of these respective drawings was completed. There are initials of other men on these drawings that I have produced, on some of them. Some are marked "Traced by" another person, and some are checked and O. K'd by the engineer. The engineer who did the checking was Mr. Doughty. Or he did not do the checking but the approval. His initials are H. W. D.

The initials of the other men who traced or checked these drawings are Mr. Greene's initials W. A. G., and Mr. Martin's initials C. G. M. I have told you about Mr. Greene. Mr. Martin was the man who worked on detail work there at the company for a short period of time. He is not still connected with the company. I am not sure where he is located. I think in Binghamton. Those drawings were detail working drawings for the purpose of manufacturing the parts.

I was familiar with the washing machines which were being put out by The 1900 Company at and prior to the time that these drawings were made. I identify all the machines exhibited here in this room as machines of the types that were being put out by the company.

I just recognize this machine [now Defendant's Ex-
528 hibit 27] which bears the number Defendant's Exhibit 2-A, on two tags, one with a stamp of the U. S. District Court for the Eastern District of New York, Equity 6888, and the other a label for the Southern District of New York bearing the Equity number 75-202 and Equity No. 81,-257, as a type of machine that was built at the 1900 Company plant at about the dates of these drawings.

I recognize a machine [now Defendant's Exhibit 20] which is tagged Defendant's Exhibit 103 in Equity 6888 in the Eastern District of New York, and also tagged Defendant's Exhibit 103 in the Southern District of New York, as one of the types of machines that was manufactured by the company.

I recognize a machine [now Defendant's Exhibit 29] which is marked Defendant's Exhibit 4 in the same cases, in the Eastern District and the Southern District of New York, as one of the machines manufactured.

The machine tagged Defendant's Exhibit 4 [now Defendant's Exhibit 29] is a machine that was made from the drawings I have just gone over.

Mr. Bristol: Will the reporter kindly mark the container in which these drawings have been produced by Mr. Wooster, as Defendant's Deposition Exhibit A.

(Marked Defendant's Deposition Exhibit A).

I identify a drawing entitled "Washing Machine with Submerged Agitator, Sketch No. 522" in that it is signed "'1900' Washer Company" and the general design appears similar to the exhibits that we have had.

529 Cross-Examination.

By Mr. Lane:

I believe the Exhibit 2-A machine [now Defendant's Exhibit 27] was made by The 1900 Company around 1921 or 1920, or earlier than that.

XQ61. As a matter of fact, that had been abandoned befort that, hadn't it?

A. I am not sure whether it was out of production at that time or not. I do not know that it was abandoned in either 1918 or 1919. I do not know why it was abandoned.

XQ64. Were you familiar with the various old rub-board types of machines that were on the market at that time?

A. No.

XQ65. You do not know anything abcut them, at that time, except that particular one? Is that true?

A. I do not know just what you mean "rub-board types." Do you mean the rods in the bottom of the tub?

XQ66. No, the ribs.

A. On the top?

XQ67. Yes, and the corrugations on the inside of the tub.

A. I do not know much about them, only just the types or models we have here.

All the machines made by The 1900 Company, that I am familiar with, of the type that has been marked Exhibit 2-A [now Defendant's Exhibit 27], were not made in the same way.

XQ70. All that were similar to the Exhibit 2-A [now Defendant's Exhibit 27], did they all have corrugated interior tubs?

A. No, I think not.

530 XQ71. Do you mean to say that the machines that were made like Exhibit 2-A [now Defendant's Exhibit 27] did not all have corrugated interiors?

A. Possibly the same 2-A model did, but not the other types, such as the other models shown here. They did not.

XQ72. What other models do you refer to now?

A. The Exhibit 103 [now Defendant's Exhibit 20].

XQ73. Is that all?

A. I do not know of any others that had the corrugated inside.

XQ74. The only machines that you know of, made by The 1900 Corporation prior to 1919, were like the Exhibits 2-A [now Defendant's Exhibit 27] or the Exhibit 103 [now Defendant's Exhibit 20]?

A. I am not sure whether the company made a cataract machine. I am not sure just when the manufacturing started on that machine.

XQ76. Aside from that, if that is an exception, did The 1900 Corporation make between 1915 and 1918 any machine other than the two that you have referred to Exhibit 2-A and Exhibit 103 [now Defendant's Exhibits 27 and 20 respectively]?

A. I understand there were three types of that machine there, and those are the only three I know of.

XQ79. Did all of the machines, except those that are like Exhibit 103 [now Defendant's Exhibit 20], that were made by The 1900 Company, have constructions substan-

531 tially identical with Exhibit 2-A [now Defendant's Exhibit 27]? I am speaking now of the construction of the rub-board gearing mechanism and the interior of the tubs.

A. All besides that?

XQ80. Except the Exhibit 103 [now Defendant's Exhibit 20].

A. Yes, all of that type, I believe. I believe that machine was superseded by later models. I know they discontinued the manufacture of that machine in the form that it is there shown, Exhibit 2-A [now Defendant's Exhibit 27]. I could not say as to date of discontinuance now. That was prior to

the time they put out the machine which I testified about which is marked Exhibit 4 [now Defendant's Exhibit 29].

XQ86. When was the Exhibit No. 4 [now Defendant's Exhibit 29] abandoned by The 1900 Company, or the manufacture discontinued?

A. I could not say. I do not know.

XQ87. It only had a very small sale, did it?

A. I would say a comparatively short time of production.

XQ88. It had only a very small sale, in numbers?

A. I do not know.

I do not know how many. I am not sure of just the length of time the manufacture was carried on. I do not know why they discontinued that machine.

XQ92. As a matter of fact, you do not know why they discontinued all of these machines that you testified about, do you?

A. No. Just to improve the models, change the models.

532 I never operated one of these Exhibit 2-A [now Defendant's Exhibit 27] machines. I never operated one of the Exhibit 103 [now Defendant's Exhibit 20] machines nor one of the Exhibit 4 [now Defendant's Exhibit 29] machines.

XQ96. So that you do not know anything about their operation—except the drawings?

A. That is all.

XQ97. And you have not any knowledge at all as to why they discontinued them?

A. No, I have not.

XQ98. How does it happen that some of these drawings were made in 1922 and the others earlier? Some run as late as May, 1922. Do you know?

A. No, I don't know.

Mr. Bristol: Did you ever make any drawings of the machines like Exhibit 2-A or Exhibit 103 [now Defendant's Exhibits 27 and 20, respectively]?

The Witness: No.

I do not know anything about their manufacture. I do not know much about the manufacture of the Exhibit 4 [now Defendant's Exhibit 29] machine, except that there were some made; I know there were some made.

WILLIAM A. GREENE, a witness for the defendant. Testimony taken by deposition at New York, October 18, 1937.

Direct Examination.

By Mr. Bristol:

My name is William A. Greene and my residence is 1024 Lake Boulevard, St. Joseph, Michigan. I am employed
533 by The 1900 Corporation. My residence in January, 1934 was 10 Grant Street, Port Dickinson, New York. Port Dickinson is approximately three miles from Binghamton, New York.

I was working in January, 1934 at the Binghamton plant of The 1900 Corporation. I have been connected with The 1900 Corporation since, well, 1920.

I am the same William Greene whose deposition was taken at Binghamton, New York, in January, 1934, in connection with the suit by the Maytag Company against the Brooklyn Edison Company. I have no connection with the Maytag Company or with the General Electric Supply Corporation, defendant in this present suit, nor any interest, financial or otherwise, in the outcome of the suit.

I am acquainted with the Vernon J. Wooster who just gave his testimony here. He was employed back in 1920, 1921 and 1922 by The 1900 Corporation.

I am acquainted with Mr. George L. Davis also. He was employed in 1920, 1921 and 1922, as superintendent of construction of The 1900 Corporation.

I know Mr. Herman W. Doughty. In 1920, 1921 and 1922 he was engineer for The 1900 Corporation at Binghamton.

Referring to this group of original drawings which Mr. Wooster produced from the files of The 1900 Corporation, and which have been marked Defendant's Deposition Exhibit A, I had something to do with the making of some of these drawings. My work in connection with them was designer and draftsman. I worked under Mr. Doughty's supervision.
534 I can identify those drawings which I myself made. They are:

Main Spider, Part No. 828-A, dated 3-1-22, casting drawing.

Base, part No. 801, dated 4-11-22, Sheet 1.

Drip Pan, part No. 804, dated 5-11-22, casting drawing.

Shaft Tube, part No. 803B, casting drawing, date 12-22-21.

Drip Pan, part No. 804, dated 9-13-21. That is a machine drawing.

Standard for Wringer, part No. 813, dated 6-9-22. A machine drawing.

Standard for Wringer, part No. 813, dated 4-17-22, casting drawing.

Connecting Rod Clutch Lever, part No. 814, dated 5-3-21, casting drawing.

Connecting Rod Clutch Lever, part No. 814, dated 6-1-22. That is a machine drawing.

Gear Case, part No. 802, dated 6-27-21, Sheet 2.

Gear Case, part No. 802, dated 6-27-21, Sheet 3.

Gear Case, part No. 802, dated 4-7-21, Sheet 1, casting drawing.

Gear Case, part No. 802, dated 4-7-21, Sheet 2, casting drawing.

Gear Case, part No. 802, dated 6-24-21, Sheet 1, a machine drawing.

535 Agitator, part No. 849, dated 9-19-21.

Leg (long) part No. 840A, dated 12-28-21.

Shaft Tube, part No. 803B, dated 12-23-21.

Oil Gasket, part No. 868, dated 10-28-21.

Connecting Rod, part No. 835, dated 9-15-21.

Agitator Thumbscrew, part No. 833A, dated 5-29-21.

Crank Driving Collar, part No. 822, dated 9-14-21.

Crank, part No. 820, dated 9-13-21,

Crank, part No. 820, dated 12-6-21.

Short Leg, part No. 841, dated 9-12-21.

Slat for Agitator, part No. 865, dated 10-19-21.

Pulley, part No. 830, dated 12-27-21.

Agitator Shaft, part No. 823A, dated 3-8-22.

Worm Gear Shaft, part No. 832A, dated 3-3-22.

Crank Driving Collar (Casting), part No. 822, dated 12-2-21.

Base for Thermal Switch, part No. 867, dated 10-26-21.

I identify these as drawings which I made by the initials W. G.

I am also familiar with the work that Mr. Wooster did on these drawings. I could identify the drawings which he made by his initials. I knew about his work at the time it was going on.

These drawings that I have said were my work, were made during the years 1921 and 1922. As to any particular drawing, the date on it indicates the date at which the drawing was made.

536 Making up these drawings was for the purpose of making and manufacturing these parts.

Q30. Was there any change in the design of the machine for which these parts were made, from time to time?

Mr. Lane: I object to it as calling for a conclusion, unless the witness shows that he knows.

Q31. Tell us what you know about that subject. What do you know about changes in design on this particular machine, Mr. Greene?

A. Well, I would not be able to go into detail.

Q32. Give us your general knowledge of what took place?

A. Well, we start in naturally with the layout, working up the details, to a finish, as shown here, and if any changes were necessary, it would be taken up with the Engineering Department, or through the Engineer, and the information conveyed to us in the Engineering Department. After that we might either revise these drawings or make new ones, depending upon the necessity of the change.

These drawings were kept, after the time they were made, in the Engineering files of The 1900 Corporation, in Binghamton. I do not personally know anything about the transfer from Binghamton to St. Joseph. I would say these drawings were the same now as at the time each was finished.

I would, I think, be able to recognize the washing machines that were put out by The 1900 Corporation back in 1920, 1921 and 1922, and thereabouts when I see them. I would say that this machine which is marked Defendant's
537 Exhibit 2-A [now Defendant's Exhibit 27] was a product of The 1900 Corporation. I could not say as to this machine which has been marked Defendant's Exhibit 103 [now Defendant's Exhibit 20].

The machine which has been marked Exhibit 4 [now Defendant's Exhibit 29] was made by The 1900 Corporation. These drawings, Defendant's Deposition Exhibit A, are of parts of the same machine as Exhibit 4 [now Defendant's Exhibit 29].

The drawings in this collection which have the initials C. G. M. were made by C. G. Martin. He was connected with The 1900 Corporation as a detailer. He was employed in the drafting room. And I saw him at work. He is not connected with The 1900 Corporation now to my knowledge.

Cross-Examination.

By Mr. Lane:

XQ49. Just what parts of these drawings that you have identified are present in Exhibit 4 [now Defendant's Exhibit 29]?

A. Well, it would be necessary for me, of course, to get over there with the machine and check the various parts. I do not know whether they are all in there or not.

I can identify a few of them, if you like. There is one on top here, the clutch lever, part No. 809 (referring to drawing). That is the lever here shown (indicating on machine Exhibit 4 [now Defendant's Exhibit 29]).

XQ52. Did you identify part 809 yourself?

A. No, I did not.

538 XQ53. I am speaking of those that you identified yourself.

A. I see. I took the first one on top. Shaft Tube, part No. 803B. That was on there, on the machine Exhibit 4.

XQ54. And that drawing was completed 12-22-21; is that correct? A. 12-23-21.

XQ55. So that the machine was made after that date, was it? A. I would not care to swear to that.

XQ56. There is every evidence of it in the drawing, isn't there—of the fact that the drawing was made for the machine? A. It would so indicate, yes.

XQ57. All right, take the rest of them.

A. You understand there are parts inside there that I cannot see.

XQ58. Just what you can see.

A. The leg, part No. 804A. That is a part of Exhibit 4. That is the one we call Long Leg. That is dated 12-28-21.

XQ61. The same statement as to that leg would apply to the other parts, wouldn't it? A. Yes.

The next one, that I can see is agitator, part No. 849; that was a part of Exhibit 4 [now Defendant's Exhibit 29].

539 Agitator Thumbscrew, part No. 833A. That is on the machine. Gear case, part No. 802, Sheet 1; the date was 6-24-21. That was a part of that machine. Pardon me, there are several drawings on this same Case. They all mean the same thing.

XQ64. How about the connecting rod clutch lever, part 814, dated 6-1-22; is that on there? A. I see two here.

XQ65. Of date 6-1-22, is the one I am asking about.

A. That is a hidden part. It is inside the gear case.

XQ66. You do not know, then. How about the standard for the wringer, part No. 813, date 6-9-22?

A. That part is on the machine.

XQ67. But you assume the machine was made after that date? A. I would.

I have identified this Defendant's Exhibit 2-A [now Defendant's Exhibit 27] as being one of the products of The 1900 Company. I do not know when The 1900 Company discontinued the manufacture of that machine.

XQ70. You know it was abandoned as far as the manufacture of it was concerned, while you were there, don't you?

A. I believe it was.

XQ71. And the same thing is true of the Exhibit 4 [now Defendant's Exhibit 29] that you have just been talking about? A. Yes.

XQ72. That was only made for a very short time, was it?

A. That is my recollection.

540 I do not know how many of them were made. I have no way of knowing. It would be very small compared with even a day's production today. I do not know why they discontinued the manufacture of either of those machines.

I never operated the Form 4 machine; never operated any of them.

The purpose of making these drawings was to use them in actually manufacturing some machines from them. That is generally the purpose of making drawings so that generally the work would follow the drawings in all instances of actual manufacture.

I do not know myself when this Exhibit 2-A machine, or Exhibit 103 [now Defendant's Exhibits 27 and 20 respectively] were made. I did not do any work on either of those.

No, I could not say what kind of machine The 1900 Company went to, when they discontinued the manufacture of this Exhibit 4 machine. I have no knowledge of that at all. I do not know what they are making today. I am not working on the washing machines. I know they are making washing machines but I could not say what types. I would recognize one of the machines if I saw it. I have never washed in one of the new type.

Redirect Examination.

By Mr. Bristol:

RDQ90. Mr. Greene, Mr. Lane on cross-examination asked you about part No. 813, and I understood you to say that you thought that part was on this machine which has been marked Defendant's Exhibit 4 [now Defendant's Exhibit 29].

Q. (continuing) Would you just look at that drawing once more, while I call your attention to a bead on the part at the top of the standard, two beads, and also an opening in the standard indicated on another figure of that drawing. Will you be good enough to look once more at the part of the machine and the part on the drawing, and tell me whether or not they correspond exactly?

A. No, they do not.

541 RDQ91. Then would you like to make any correction in your previous testimony, as to the part shown in that particular drawing being on the machine Defendant's Exhibit 4 [now Defendant's Exhibit 29]?

A. Nothing except that it is not exactly like the drawing.

RDQ92. Then is it correct to say that the standard for wringer which is on the machine Defendant's Exhibit 4 [now Defendant's Exhibit 29] is not made from this drawing No. 813, but must have been made from some other drawing?

A. It was made from some other drawing.

Recross Examination.

By Mr. Lane:

RXQ93. Will you produce that other drawing?

A. This one here (hands drawing to Mr. Lane).

RXQ94. You have the drawing, have you? I wish you would check it carefully, and see if it corresponds with that part of Defendant's Exhibit 4 [now Defendant's Exhibit 29].

A. This isn't it. I have not one that does show it. I have not any that shows that; so I cannot tell you when that was made.

The drip pan shown in Sheet 1, of part 804, dated 5-11-22 is not on that machine Exhibit 4; that is not the same. That is not on that machine. I could not say whether one of those, shown on that drawing, was ever made or not. I have no knowledge of it. I have no knowledge when the identical machine Exhibit 4 was built by The 1900 Corporation. For all I know it may have been made after the latest date of

542 the drawings that I testified about.

RXQ104. How do you know that Exhibit 2-A [now Defendant's Exhibit 27] was a product of The 1900 Company?

A. Well, I saw them in the plant, stored there.

RXQ105. Were they all constructed like Exhibit 2-A, those that you saw there?

A. As near as I could determine, yes.

RXQ106. That is, the machine as it there stands was a duplicate of all the others that you saw?

A. As far as I know.

RXQ107. At least those are the only ones that you saw?

A. Yes.

RXQ108. All had the corrugated interior of the tubs and the sliding rub-board construction? A. I could not say.

RXQ109. All that you saw there?

A. All that I saw, yes.

RXQ110. You do not know why they used the sliding rub-board, do you? A. No.

RXQ111. You never saw them operated? A. No.

RXQ112. You do not know why they used the corrugated interior of the tubs, do you? A. No, I do not.

RXQ113. Were all the tubs corrugated, that you saw on that type of machine? A. Yes.

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543 GEORGE L. DAVIS, a witness for the defendant. Testimony taken by deposition at New York, October 18 and 19, 1937.

Direct Examination.

By Mr. Bristol:

My name is George L. Davis, my residence 46 Grand Boulevard, Binghamton, New York. I am plant engineer for The 1900 Corporation. In January 1934 I resided at the same address. I was superintendent of The 1900 Corporation, Binghamton plant.

I am the same George L. Davis whose deposition was taken at Binghamton, New York, in 1934, in connection with a suit brought by the Maytag Company against the Brooklyn Edison Company. I have no connection with the Maytag Company, the plaintiff, or the General Electric Supply Corporation, defendant, in this present case nor any interest, financial or otherwise, in the outcome of the present suit.

I have been in the employ of The 1900 Corporation or its predecessors for about 24 years. I have been superintendent most of the time; plant engineer in just recent years.

I recognize, as a product of The 1900 Corporation, the washing machine which we have here, which has been marked Defendant's Exhibit 2-A [now Defendant's Exhibit 27] in the case in the Eastern District of New York and in another case in the Southern District of New York.

The machine which has been marked Defendant's Exhibit 103 [now Defendant's Exhibit 20] in the same cases, is a product of The 1900 Company.

544 A machine which has been marked Defendant's Exhibit 4 in the same two cases (now Defendant's Exhibit 29) also was manufactured by The 1900 Corporation.

I have produced some photographs and papers, etc., from the files of The 1900 Corporation at Binghamton, at your request. This photograph is of the model that I am pointing at. (Witness refers to Defendant's Exhibit 103 [now Defendant's Exhibit 20].)

(Photograph marked Defendant's Deposition Exhibit No. 10).

I have another photograph here of one of our Form 4 machines, similar to this exhibit to my right. (Witness refers to the machine marked Defendant's Exhibit 4 [now Defendant's Exhibit 29].)

(Photograph marked Defendant's Deposition Exhibit No. 18).

I have produced a tally book. The tally book carries serial numbers of the Form 4 Agitator Electric Machine, with the shipping dates of those. The book is marked on the end of the leaves "Agitator Electric No. 4." At the head of the first page of the tally book there is the word "Whirlpool". The Form 4 machine was occasionally called "Whirlpool".

Mr. Bristol: I offer the tally book in evidence, particularly pages 1 to 14 inclusive thereof, and I will ask that that be marked Defendant's Deposition Exhibit 11. We will substitute photostats, Mr. Lane, with your consent.

(Copies of pages 1-14 of tally book marked Defendant's Deposition Exhibit No. 11).

545 The Witness: I have two invoices here that cover shipments of Agitator Electric Form 4. The date of the earliest invoice that I have here is October 8, 1921.

(Invoice marked Defendant's Deposition Exhibit No. 13.)

This invoice, Defendant's Deposition Exhibit 13, dated October 8, 1921, calls for two machines.

Q23. Now will you refer to the tally book Defendant's Deposition Exhibit No. 11, and tell me whether there is any indication in that book that two machines were shipped on October 8, 1921?

A. Machine Serial No. 1001 was shipped on October 8th, and 1002.

There is a notation in the tally book as to the consignee; there is a pencil note with the name "Holmes". The consignee on that invoice, Defendant's Deposition Exhibit 13 is W. Lee Holmes. W. Lee Holmes was our Pacific Coast representative for some years.

I have produced another invoice. The date on the second invoice is January 18, 1922.

(Invoice Marked Defendant's Deposition Exhibit No. 14).

This invoice Defendant's Deposition Exhibit 14 refers to three machines of the Serial numbers 1035, 1043 and 1033. Referring to the tally book, the date January 18, 1922, appears after 1033, 1035 and 1043. The consignee on that invoice, Defendant's Deposition Exhibit 14 is W. A. Osgood. Mr. Osgood was our representative in Syracuse. From examination, the serial number on the machine which is here in
546 the room, marked Defendant's Exhibit 4 [now Defendant's Exhibit 29] is No. S1033.

I have also at your request produced an original drawing, sketch No. 522. I cannot say as to where it was located in our files. It was located in our plant at Binghamton. That drawing shows generally an experimental model which is in the room here, I believe. I should say partially. I am now referring to a machine or model here which has been marked Defendant's Exhibit 8 in the cases in the Eastern District of New York and the Southern District of New York [now Defendant's Exhibit 30] (Machine marked Defendant's Deposition Exhibit 8).

I find on this sketch No. 522, a wringer gear case substantially as in the model; the wringer bracket which supports the wringer gear case; two braces and foundation plate.

(Sketch No. 522 marked Defendant's Deposition Exhibit No. 9-A).

I believe it was about 1921 when the 1900 Corporation went into production of the Form 4 machine. Working drawings prepared; my recollection is that we had working drawings on that Form 4 model. I have examined some of these drawings marked Defendant's Deposition Exhibit A and it is my recollection that they bear on the Form 4 Agitator machine.

I believe I have from the files of The 1900 Corporation a test memorandum. It bears the date February 8, 1921. In

that same sheaf of papers, I have a small sheet with some pencil notes, bearing the date 9/30/20.

Mr. Lane: I do not like to interrupt, Mr. Davis, but do you know anything about those other than the fact that
547 you got them from the files?

The Witness: I cannot say that I have been thoroughly familiar with them in the past.

Then another pencil note. It says "To Greene," bearing the date 11/17/20.

The next one is a copy of a letter to Mr. W. Lee Holmes, dated January 11, 1921. That paper indicates the letter was written by the general manager. The general manager at that time was H. L. Barker.

Mr. Lane: He says from examining the letter that it has the signature or the initials, and says it is written by the manager. He does not know that, only that it is indicated that way on the paper. Isn't that all, Mr. Davis?

The Witness: That is substantially so.

The next paper in the sheaf is a copy of another letter addressed to Mr. W. Lee Holmes, dated January 15, 1921.

The next paper in the sheaf is a hand written copy of a record of test of Whirlpool washer, under date of February 8, 1921. It is customary for the company to make tests of all new models. I cannot recollect this particular test.

The next sheet in this sheaf of papers is a copy of a letter to Mr. W. Lee Holmes, under date of February 16, 1921, and the next paper after that is a copy of a letter to Mr. W. Lee Holmes, dated February 17, 1921.

The next paper after that is a letter to Messrs. Fish, Richardson & Neave, attention of Mr. Merrell E. Clark, dated March 23, 1921. I am somewhat familiar with the con-
548 tents of that letter. I believe the text of that letter describes the action of the machine under development or starting in to be developed at that time. H. W. Doughty, engineer, signed that letter. Mr. Doughty was the engineer with The 1900 Company at that time. We contacted rather frequently.

The next paper in this series is a letter to Fish, Richardson & Neave, attention of Mr. Merrell E. Clark, dated March 25, 1921, signed H. W. Doughty, Engineer, and attached to that is a blueprint of machine drawing, dated March 22, 1921.

There is a sketch number on that blueprint, but I can-
549 not make it out. I think it is 522. I believe the blue-
print was made from this original drawing, this sketch No. 522 marked Defendant's Deposition Exhibit 9-A.

(Sheaf of papers marked Defendant's Deposition Exhibit No. 9).

I am the George L. Davis who is the patentee of the U. S. Patent No. 1,240,826. The subject matter of that patent is Agitator for Washing Machines. I believe the Form 1 Agitator Electric carries about the same agitator as disclosed in that patent; that is the machine marked Exhibit 2-A [now Defendant's Exhibit 27].

(Copy of Davis patent No. 1,240,826 marked Defendant's Deposition Exhibit No. 3).

The ribs on this agitator are not as originally arranged; I am referring to Exhibit 2-A [now Defendant's Exhibit 27] now.

I am the George L. Davis who is one of the joint inventors of U. S. Patent No. 1,496,305 to Herman W. Doughty and George L. Davis. The Herman W. Doughty who is the other inventor of that patent was the engineer with The 1900 Company at that time, the same Mr. Doughty to whom I have previously referred in my testimony here.

(Copy of Doughty and Davis patent 1,496,305 marked Defendant's Deposition Exhibit No. 5).

This Doughty and Davis patent, Defendant's Deposition Exhibit No. 5 is headed "Washing-Machine". The subject
matter of that patent approximates some of the ma-
550 chines here in this room. The structure shown in the
patent is similar to the structure on this Exhibit No. 8 [now Defendant's Exhibit 30], as to the base, wringer upright, braces, possibly the legs.

The subject matter of that patent is similar in some respects to the Form 4 agitator (referring to the machine previously marked in the other cases Defendant's Exhibit No. 4 [now Defendant's Exhibit 29]).

Q78. Mr. Davis, will you give us the history of these agitator electric machines at The 1900 Company, from Form 1 through Form 4, referring, if you please, to the machines themselves.

A. To the best of my recollection Form 1, which is shown here as Exhibit No. 2-A, was the first of the group.

(1900 Form 1 machine marked Defendant's Deposition Exhibit 2-A [now Defendant's Exhibit 27]).

I recall the model of Form 2 which followed Form 1, which had metal legs and a metal base ring to hold the legs. Otherwise it was about the same as Form 1. There is no Form 2 machine in the room here. Form 3 followed that, with the metal tub, metal base ring, metal legs. I believe the agitator construction was substantially the same in all three. There is an example of Form 3 in the room; that is Exhibit No. 103 [now Defendant's Exhibit 20].

(1900 Form 3 machine marked Defendant's Deposition Exhibit No. 103 [now Defendant's Exhibit 20]).

I believe the Form 4 Agitator Electric, as numbered here Defendant's Exhibit 4 [now Defendant's Exhibit 29] followed Form 3.

551 (1900 Form 4 machine marked Defendant's Deposition Exhibit No. 4 [now Defendant's Exhibit 29]).

The water action in the Form 1 agitator was centrifugal, in that it was thrown outward at the top to the sides of the tub, then downward to the bottom, then inward to approximately the center, then upward to the agitator, and outward again. I believe the water action in the Form 2 was substantially the same. It was the same in Form 3.

The water action in the Form 4 machine is similar to that in the earlier models, but reversed, in that the agitator is located adjacent to the bottom of the tub, so that the centrifugal action is outward from the centre in the lower portion of the water, to the tub sides, then up to the top, then in to the centre, then down to the agitator and out again.

I do not believe I can recall approximately how many of the Form 4 machines were sold by The 1900 Company.

The tally book would give an indication as to that. From the tally book I would estimate in the neighborhood of 800 machines. My recollection is not very clear as to whether Forms 1, 2 and 3 machines were sold in large or small quantities. I believe the Form 1 was sold in quite considerable quantities. Not so many of the Forms 2 and 3.

I have a circular here of the Model 400. That shows a machine produced by The 1900 Company. I cannot place the date of the manufacture of that model. I would say that it was later than Form 4.

(Circular marked Defendant's Deposition Exhibit No. 12)

552 I have a dealer's catalogue. It carries the company's name, catalogue No. 10, and it is dated November 1, 1919. It shows several models of hand machines, power machines—water power. It shows a cut of the Form 1 Agitator Electric on page 7.

(Catalogue marked Defendant's Deposition Exhibit No. 10).

Q100. I call your attention, Mr. Davis, to a paper marked Defendant's Exhibit 7 in the case in the Eastern District of New York, Equity 6888, and No. 7 in the cases in the Southern District of New York, and ask you whether you have made a search in the records of The 1900 Company for the original from which that photostat was made (handing to witness)?

A. Yes, sir; we made a search, but were unable to find anything like that.

I would not necessarily recognize the hand-writing, but I would the initials T. W. B., they are the initials of T. W. Behan. He was the manager of the company at that time. It is my belief that the initials H. W. D., on the same sketch are Mr. Doughty's initials; our engineer. That is the same Mr. Doughty that I have previously referred to as the engineer at The 1900 Company.

(Photostat copy of sketch marked Defendant's Deposition Exhibit No. 7).

Defendant's Exhibit 103 [now Defendant's Exhibit 20] embodies substantially the agitator structure shown in my patent No. 1,240,826, but there is one rib lost from this
553 dise.

Q107. In other respects how does this Exhibit 103 machine compare with your patent No. 1,240,826?

A. Do you mean as to the machine structure?

Q108. Yes.

A. There are quite a number of differences.

The tub on the exhibit is straight-sided, whereas the tub in the patent is shown tapered, and is of wooden construction. Both the machine and the patent show a hinged cover on top.

I believe the water action in Exhibit No. 103 is the same as described in my patent.

October 19, 1937.

Cross-Examination.

By Mr. Lane:

I went with The 1900 Company in 1913. At that time they had several models. Hand machines. I believe there was an electric machine and a water power machine. With much wooden tub construction. The tubs oscillated back and forth.

XQ115. In that tub the machine was mounted on an independent set of legs, and was swung either by hand or power to an oscillating arc, was it not?

A. You speak of "that" machine. There were a number of models, as I recollect.

XQ116. I call your attention to the photograph or cut, and ask you to state whether or not that is one of the types of machines that you have just described (handing to witness)?

554 A. That cut looks like one of the wooden tub electric motor machines.

In that machine the operation of the tub was by oscillations back and forth. In that machine there is an assembly of cleats and discs in the bottom of the tub. The cleats were radially arranged and secured to the bottom of the tub.

XQ120. You notice at the right hand of that figure there is a rub-board construction. How was that used in the tub?

A. That cleated disc was arranged on top of the clothes and water, as I recollect it, and held from rotating by means of a square rod projecting down through an arm.

XQ121. That is, there was an arm projecting over the top of the tub, which had a fixed member on it, on which the rub-board was splined; is that correct?

A. Yes, this cut shows that arm.

XQ122. When the washing operations were carried on this rub-board was first removed and clothes placed in the tub, and then the rub-board put in position, and rested on top of the clothes?

A. That I believe is substantially the operation.

XQ123. The rub-board moved up and down, depending on the position of the clothes in the machine?

A. Its height was determined, I believe, by the contents of the tub.

XQ124. And they were intended to engage the clothes in the operation, were they not, both above and below?

A. I am not just clear as to what is claimed for the washing operation.

555 XQ125. You do not know how they operate? I am not talking about what they claimed for it, but what

actually happened in the operation of the machines, if you know.

A. The oscillations of the tub would act on the lower portion of the load of water and clothes, and I would expect that the disc on top would prevent movement of the upper portion of that load.

XQ126. And do you know whether that is so in the actual operation of the machine, or did you observe it?

A. It has been a long time since I have seen one of these in operation, but I believe that—

XQ127. That that fairly describes it?

A. It is a fair description.

(Cut marked Plaintiff's Cross Exhibit No. 1) [Received in evidence as Plaintiff's Exhibit 19-1]

It is my recollection that that machine shown in Cross Exhibit No. 1 was being made by The 1900 Corporation at that time.

XQ129. The 1900 Company made a similar machine at the same time which was operated by hand—that is, there were two knobs or handles projecting up from the side of the tub, by which they oscillated, instead of using power to oscillate them?

A. The company made a number of hand power models at that time.

That construction could be operated by hand.

556 At the time I came there they were making a construction similar to that shown in Plaintiff's Cross Exhibit 1, except that the tub was oscillated by hand instead of by power. I do not know when that machine was abandoned. I would have to refer to the record to determine the time when it was superseded by some later model. I could not say whether it was abandoned at the time The 1900 Company put out their Form 1 machines, approximately, or before that.

I would not want to attempt to fix the earliest date when the manufacture of that machine was discontinued by The 1900 Company, without referring to the records.

I know the manufacture of that model has been discontinued for some years. I cannot definitely state whether it was discontinued prior to 1920. I do not know now without looking up our records.

I have no recollection of what might have been sent to the attorneys who took out my Davis patent No. 1,240,826

at that time, and I have made no investigation at this time concerning it.

557 I do not know whether there would be any papers in the files of The 1900 Company, that would show just what I wrote to Snow & Company at that time, or what they wrote Snow & Company. That is quite a while back. The correspondence might not be available on it. I would not know.

This Exhibit 2-A machine that is in the room here, that I testified about yesterday, carries an agitating disc. Roughly it is in line with this Davis patent.

XQ143. That is all you meant when you said yesterday that that corresponded to the patent, is it?

A. Well, yes, but there is another patent, I believe, that bears on that machine.

It is a Davis patent. I am not clear; I think it covers gearing. I could not tell you the number of that patent. I believe the Defendant's Deposition Exhibit 2-A machine does correspond to the device disclosed in this Davis patent 1,240,826, insofar as the agitating disc is concerned, and some other points.

558 The other points are, well, the style of the tub and the arrangement of the cover on the tub. That is all I notice.

XQ149. I notice on this drawing there are eight members marked 4, 5, 6 and 7 in the patent drawing. What is the number on the Exhibit 2-A?

A. There are twelve on the exhibit.

I doubt if that condition, of the number of cleats or rubbers, would affect the operation materially.

XQ152. How would it immaterially?

A. It might tend to increase or decrease the water action.

Offhand I do not know which.

XQ154. You never tried it?

A. We probably tried it years ago.

XQ155. Have you any actual knowledge of ever trying a machine made in accordance with the Davis patent 1,240,826, in The 1900 Company's plant, from your actual recollection—and the date, of course, you actually tested it?

A. You are asking me to recall things back of 1917. I do not know that I can do that.

XQ156. As a matter of fact you cannot? That is
559 what I am trying to show, if that is a fact.

A. No, I do not believe I can.

XQ157. So that you have no recollection at present of any tests having been made of the machine shown in the Davis patent No. 1,240,826, if I understand you correctly?

A. That is correct. I only know it was customary to run tests on new devices always.

XQ158. But you do not remember and you have no present recollection of any tests being made of the machines shown in the Davis patent No. 1,240,826, do you?

A. No, I cannot recall any particular test on that.

In this machine of the Davis patent, when the cover was down, I am not sure whether the rub-board rested directly on the bottom of the tub. That is shown in the patent drawing Fig. 1; the patent drawing shows it that way. The agitator was fixed to the square rod which could slide through the driving member above. The drawing does not show any driving mechanism, but the shaft 3 is intended to project upwardly through the cover.

XQ163. And is that member 3 supposed to be iron
560 or other metal, on which the rub-board is mounted?

A. I don't believe the patent would limit the construction to that extent. It might be iron or wood, or any other material suitable.

My intention at the time I filed that application was to show there merely a means of driving the disc from above.

XQ165. What was the customary means for that purpose at that time?

A. My recollection is it was a square rod, steel rod.

In order to open the cover of that machine it was necessary to pull the steel rod and the agitator to substantially its upper limit of movement adjacent the cover; it was necessary to do that to clear the agitator from the tub side, I believe.

XQ167. You never made a machine like the structure shown in the Davis patent, other than the resemblance to it which is exhibited here by Exhibit 2-A and Exhibit 103, did you? A. I am not sure.

I believe some machines similar to this patent were driven with a water motor on top of the tub, the cover, were made by The 1900 Company.

561 XQ170. Is there anything to show that, or is that just your indefinite recollection?

A. I have nothing here to show it.

The construction did not any more closely resemble the Davis structure than the structure of Exhibit 2-A. It is my recollection that in the place of the mechanism that you see on this Exhibit 2-A there would be a water motor mounted on the wood cover; otherwise the construction is substantially the same as Exhibit 2-A.

XQ173. I believe you testified before that in all of these machines like the Exhibit 2-A, the tubs were corrugated on their interiors, did you not? A. I don't recall.

I cannot say now that they were all corrugated. I have no recollection of their being other than corrugated; I cannot recall smooth-sided tubs in that particular machine. I believe it was customary at that time to use corrugated interior tubs.

XQ177. That was the general practice in all rub-
562 board machines at that time, that you were familiar with, was it not?

A. I think it was common in some, at least.

XQ178. It was common in all that you were familiar with, wasn't it?

A. I cannot say as to that.

XQ179. In all that you now recollect it was common, wasn't it?

Mr. Bristol: The witness has answered, Mr. Lane.

A. I can only recollect that far back wooden tubs in general.

XQ180. And they all were corrugated, as far as you recall, on their interiors, like Exhibit 2-A?

A. No, I believe we had smooth-sided wood tubs on some of our hand machines.

XQ181. I am speaking of this type of machine. Will you answer with that understanding?

A. I cannot be certain.

I am not able to recall the speed of oscillation of the tubs, in machines like Plaintiff's Cross Exhibit No. 1 that I testified about, when used either by hand or power. I am not absolutely certain on the speed of oscillation of the machines like Exhibit 2-A.

XQ184. You testified before it was 40 times in one direction and 40 times in the opposite direction; is that correct? That is page 896 in the previous deposition.

A. Those machines might have run anywheres from 40 to possibly 50 strokes.

563 XQ185. Do you know, or was your answer previously correct? You said it was then 40 per minute, and you made no other statement. How do you happen to change that?

A. The drive on those machines might have been.

XQ186. What does this machine operate at, that you have here; can you tell by looking at it?

A. No, I could not tell by looking at it.

I believe the height of the rubbers or projections in that Exhibit 2-A machine was about 7/8th of an inch.

XQ188. Will you measure the one that is there and see what that is?

A. (Witness measures with rule on Exhibit 2-A) They vary some, from 13/16th to 7/8ths.

XQ189. You said yesterday that the cleats on that machine had been changed. What did you mean by that? You started to explain it and did not finish.

A. The arrangement is not perfectly uniform.

XQ190. How does it differ from the Davis patent?

A. Well, it is my recollection that the ribs were originally arranged radially, and not otherwise.

XQ191. Did you ever make a machine, as far as you recall, that had the construction arranged as shown in that Exhibit 2-A—for The 1900 Company I mean?

A. I do not believe that we produced them with that exact arrangement.

I do not recall whether we put them out with that number of rubbing cleats. I do not recall the number that were put on there.

564 XQ194. Did you ever test that Exhibit 2-A machine at different speeds of oscillation, or ones like it? I am speaking now of the rub-board mechanism.

A. I have no clear recollection of specific tests on that machine.

XQ195. Then you have no recollection of tests at different speeds of oscillation.

A. I can only say that in the normal course of events that probably was done.

I have no recollection specifically of it being done.

In the tally book that I referred to yesterday it is indicated that during the latter part of the period the sales of this structure were petering out, or much less then previously.

I have not any recollection as to whether the manufacture correspondingly petered out, but it no doubt did. We would not continue producing them if we could not ship them.

XQ199. Do you know why that petered out?

A. Only that there were other models coming along, and they superseded this one.

565 XQ200. When was the last sale made, as shown by that tally book of that Form No. 4 machine?

A. The latest date I see here is October 30, 1923.

XQ201. Can you give me the approximate number of machines that were sold during 1923, from the tally book?

A. I would have to go back through here and count up the detail.

XQ202. You made a rough estimation of the number for the whole period. Make a rough one for this period.

A. These shipping dates skip around, in numbers, in the book. (Witness examines tally book exhibits.) There appear to be about seven in October.

XQ203. I am speaking of the rest of the year 1923 now.

A. I do not understand the question.

XQ204. Well, take September. How many were sold in September, 1923?

A. I find only three during September.

There appear to be about three in August, 1923. I only find two in July of 1923. I do not find them in June

XQ208. There was none in June; is that right?

A. The dates skip around so here.

XQ209. But you do not find any for June, 1923; is that correct?

A. No, but turning back in the book further I find November, 1923.

XQ210. How many in November? A. Two.

I don't seem to find any in May, 1923. I find one in April, 1923. I am unable to find any in March, 1923. I find one in February, 1923. I find about twelve in January, 1923.

566 There are approximately twenty-nine in December, 1922. About twenty-two in November, 1922. I find about thirty shipments in October, 1922.

XQ219. As a matter of fact, the sale of these Form 4 machines had pretty well petered out before the end of the year 1922, hadn't they, from those records that you have just examined?

A. Yes, I would say they were moving rather slow.

XQ220. Do you recall manufacturing any of these machines after the middle of the summer of 1922, say August?

A. I could not recollect that.

XQ221. Have you any records that show when you discontinued the manufacture of these Form 4 machines?

A. I do not know of any records that would fix that time.

XQ222. Do you recall carrying on the manufacture through the whole period, or do you recall that the machines shipped in 1923 were largely manufactured early in 1922?

A. I have no very clear recollection of that.

XQ223. What is your impression?

A. My impression is that they were probably produced in small quantities through that period.

XQ224. In the whole period, you say?

A. Well, substantially.

XQ225. At any rate, the sales of these were abandoned as early as November, the latest date we find, in 1923, by The 1900 Company?

A. I am not sure of that. In searching out these other numbers which you asked for I saw an occasional later date.

567 XQ226. The manufacture substantially was abandoned in 1922, wasn't it, as far as your records show—so far as any sales of the Form 4 by The 1900 Company are concerned?

A. The records would indicate that.

The machine shown on page 6 of Defendant's Deposition Exhibit 10 and the machine shown in Plaintiff's Cross Exhibit 1, appear to be cuts of the same machine.

Defendant's Deposition Exhibit 10, at pages 2 and 3, shows two models of the early hand machines as manufactured by The 1900 Company when I first went there.

XQ229. And that shows the arm that you have referred to, in which the rub-board support was slidably mounted?

A. One machine has that clamped between two arms. The other one has it slidably mounted.

On the one on page 2, the supporting arm is clamped. On page 3 the arm that I have already testified about as supporting the rod that supports the disc is shown, and that arm prevents the rotation of the disc.

568 I referred to the locking mechanism shown on page 2 of that Exhibit. To my recollection that disc in that particular model shown here as the gravity washer was not allowed to float on the top of the clothes and water, but was clamped solidly in position.

It was held against movement vertically, and against rotation and I believe was placed down in contact with the clothes and locked in that position, in the general operation of it, approximately on the top of the mass.

XQ236. Regardless of the water line?

A. Regardless of the water line?

XQ237. Yes, regardless of the water line.

A. I don't know.

In this Form 1 machine shown on page 7 there is a water line indicated. That would be the recommended water level, for customers, for the proper use of the machine.

XQ240. How were the clothes placed in the machine after that water had been put in up to that water line, as shown in that cut?

A. That would depend entirely on the user.

As to the recommended practice, I believe our water line was to indicate the height of the load, clothes and water, in the tub.

XQ242. And the clothes were filled in between the rub-board and the bottom of the machine; wasn't that the intended operation?

569 A. Well, the clothes were supposed to be in the water.

XQ243. Between the rub-board and the bottom of the machine?

A. Submerged.

XQ244. How much clothes was it recommended be put in there, do you know?

A. I don't recall the recommended poundage in that machine.

XQ245. Didn't The 1900 Company at that time advertise the large capacity of this machine, clothes capacity?

A. I believe they did. The literature would probably disclose the capacity.

XQ246. And they stressed the fact that a large number of clothes could be washed in a single operation, in the advertising literature, did they not?

A. I am not too familiar with the sales efforts.

XQ247. But that was the recommended practice at that time, was it not?

A. I am not clear on your question now.

XQ248. It was the recommended practice to put as many clothes in the tub as could be well placed in it between the rub-board and the bottom of the tub, wasn't it?

A. I don't believe so. It is my recollection that we have determined, usually, by test what represented the best loading, and then recommended that.

570 XQ249. You said you did not make any tests of this machine, that you have any recollection of now, didn't you?

A. I believe I said I could not recall any specific tests.

XQ250. Then you do not know what the recommended load was?

A. I don't recall that figure.

XQ251. Does the cut on page 11 show the mode of operation and construction of the Exhibit 2-A machine that you referred to earlier in my examination? I am speaking of the motive power.

A. Yes, it shows a cut of our agitator motor washer, as it is called here.

XQ252. That had an interior construction substantially like the Exhibit 2-A, except for the arrangement of the rubbing cleats on the rub-board.

A. My recollection is that that machine carried this type of agitator.

XQ253. Except for the indications that I have given of the differences?

A. Yes.

I am unable to recall any machines other than shown in the catalogue, Defendant's Deposition Exhibit 10, that
571 were being made at the date of the catalogue, 1919, by that company. The 1900 Company is not making any of the machines shown in that catalogue at the present time—any of the types there shown, to my knowledge. I cannot answer whether it has in the last ten years. I do not know. I am unable to recall any.

I believe Forms Nos. 1, 2, 3 and 4 machines operated substantially at the same speed of oscillation, substantially the same.

XQ259. Had it abandoned the machines like Defendant's Deposition Exhibits 2-A and 103 prior to the time it abandoned the Form No. 4?

A. I cannot recall positively about that.

XQ260. Isn't that your best recollection?

A. To the best of my recollection the production stopped on the Form 1 before it did on the Form 4.

XQ261. And would you say the same is true of the Forms 2 and 3?

A. I am not clear on 2 and 3.

XQ262. You do not know when that was abandoned. What is your best recollection?

A. I cannot recall that clearly enough to state.

XQ263. Do you know why it abandoned the Forms 1, 2 and 3 machines?

A. There probably were numerous sales reasons. A
572 newer model superseded them.

XQ264. Do you know about the sales reasons, or are you not familiar with that matter?

A. Offhand I don't recall any of them.

I would say they discontinued the manufacture of the Form 1 machine for the reason that it was superseded by the new model.

I do not recall any other reason. It seems to me that would cover the reasons.

XQ267. You testified before that one of the reasons was that the machine was topheavy, because all of the mechanism was on top of the tub. I am referring to XQ175 on page 93 of the previous deposition.

A. I believe that was evident, that the mechanism is all mounted on the upper portion of the machine.

XQ268. And that was one reason why it was abandoned, as you have testified before, was it?

A. Yes, that would represent a reason.

XQ269. You also testified it did not make as good an appearance as the other machines. Was that an additional reason?

A. I believe so. The tendency has always been to improve the appearance of the machines.

XQ270. Were there any difficulties, in the hands of
573 the operators of these machines, in opening and closing the cover with the sliding shaft and rub-board?

A. I do not recall definitely. There might have been some criticism on the part of the user, having to raise that weight.

XQ271. Wasn't that an actual difficulty in connection with the operation of the machine, practically, from your own observation of it?

A. I don't know that I can recall it as an actual difficulty.

My recollection is that the agitator was slidably mounted with respect to the cover in the Exhibit 2-A machine to adapt it to varying loads in the tub. In that machine it was necessary for the operator to grasp the handhold at the top of the shaft which supported the agitator, and pull it upwardly to the extreme outward limit of movement, to lift the cover.

I am unable to recall the weight of the cover and the mechanism on top, and the agitator and its shaft.

574 XQ275. In such operations as you carried on, if you carried on any with that machine, did the rub-board always stay on top of the water, or did it go into the water to some extent?

A. I believe it mainly remained on top of the water.

XQ276. Did it go into the water to some extent, and cover itself with water, in the operation of the machines? Only if you know.

A. I am unable to recall on that point clearly.

The cleats in the Form 4 machine run from 13/16th to 7/8th of an inch in height. I believe they are substantially the same as the cleats in the Exhibit 2-A machine, in the actual manufacture of those machines.

XQ279. You testified before that you never tested for the efficiency of Form 4 over Forms 1, 2 and 3. Have you ever made any such tests since?

A. I do not recall any tests.

XQ280. Is there any substantial difference in the operation, so far as washing clothes is concerned, between the Forms 1, 2, 3 and 4 machines, as far as you know?

575 A. If you are referring to the action of the washing device on the contents, I do not believe there is any great difference.

My recollection is that in the Form 4 there was an unsymmetrical arrangement of ribs on the agitator which resulted in an improved action.

It improved the action by creating an unsymmetrical flow of water in the agitator.

That improved it, over the Forms 1, 2 and 3 in that it tended to prevent anything from becoming lodged on the agitator disc, as I recollect.

I don't recall definitely whether that happened with the Forms 1, 2 and 3. It might have been a condition under certain loading of the machine, certain proportions of clothes and water.

XQ286. You testified before that prior to the time you made your single agitator machine, the single vane agitator machine, it was quite common practice for washing machine manufacturers to depend upon the rubbing of the clothes with wooden or other parts of corrugated surfaces, or things of that kind. Is that your present impression?

A. Years ago I believe that was commonly done.

576 XQ287. That is, it was quite common prior to the time you made your single vane agitator, wasn't it?

A. I am not too clear on that.

XQ288. What was the purpose of the corrugations on the interior of the Form 1 machine?

A. I do not recall any definite purpose, except that they were commonly used.

XQ289. You testified before, at page 111, as follows: "It is my recollection that they were in there for the purpose of presenting a roughened surface for the clothes to move over, to increase the washing action by rubbing contacts." Is that the fact?

A. Yes, I expect that they would tend to operate in that manner.

XQ290. That is what they were put in there and used for, wasn't it?

A. That is so far back that I have no recollection of the specification.

XQ291. That was all that manufacturers used them for, so far as you know, wasn't it?

A. I believe that was the assumption, to help wash.

XQ292. That is like rubbing them over the old-fashioned rub-board, more or less?

A. Yes.

XQ293. You have referred to Defendant's Deposition Exhibit 9, and your attention was called to a certain rec-
577 ord of test made on February 8th, 1921. Previously you testified that you had no recollection of the test referred to in that exhibit. Is that a fact?

A. I have no definite recollection of the test itself. I recollect this test record.

XQ294. Yes, but I mean that you had no knowledge of the test being made at that time, if I understand your previous testimony. Is that so?

A. I am unable to recall now that I was present at that particular test, if that is what your question is.

XQ295. Or any other similar test of that washer, were you?

A. I think I have already stated that I cannot recall any specific test.

XQ296. So that you do not really know anything about the test that is indicated by this February 8th document you produced, do you?

A. No, I cannot claim any original knowledge of that.

XQ297. And you know nothing about any of the correspondence or documents that are exhibited in this Defendant's Deposition Exhibit 9 [now part of Defendant's Exhibit 38], other than the fact that you produced them from The 1900 Company's records; is that true?

A. They are the property of our company, and letters written on "1900" stationery, I believe, some of them.

578 Aside from that I do not have any actual knowledge that these were written at the time I state, other than that I got them from the files.

I have not read through this letter of March 23, 1921, which bears the signature H. W. Doughty, to Fish, Richardson & Neave. I do not believe I have read that letter.

XQ300. I would like to have you read it through (handing exhibit to witness), and state whether or not you agree with the statements contained in it?

A. Yes, I believe I agree with the majority of the statements.

XQ301. Is there anything that you cannot agree with?

A. In fact all of them.

XQ302. That is, you heartily endorse everything that is said there by Mr. Doughty, who wrote that letter?

A. Yes, I do.

I don't recall any machine such as shown in Defendant's Deposition Exhibit 7. I may have seen that sketch, but I have no recollection of ever seeing it. I have none now.

579 XQ305. With the Form 1 machine filled with clothes, up to the water line, and in water, and the machine operated at 40 oscillations per minute, do you think that the clothes would be washed largely by the action of the water itself, as distinguished from any other action?

A. It is my opinion that the water action is the main washing or cleansing factor.

I believe it is due to the fact that the clothes are circulated around and around, and the water is forced through them, which naturally forces the clothes against the tub sides and the bottom, so that they are flexed and bent. It is my recollection that when the machine was loaded properly it washed all the clothes very well. By "loaded properly" I mean not too many clothes for the amount of water. So that the mass was fluid.

A. I cannot recall definitely whether we advocated any such loading of the clothes at that time in that machine, but we probably did.

580 XQ310. You say "probably did". Why do you say that? Is there any literature to show it?

A. It is my opinion that we would.

That is all I base it on.

XQ312. As a matter of fact, the mass of clothes was operated on by the rub-board, and the rubbing against the sides, was it not, in the interior of the tub?

A. I believe the clothes are rubbed somewhat by the agitator ribs.

XQ313. And by the sides of the tub?

A. I have already stated that the clothes would be forced against the sides of the tub by the water currents.

XQ314. And rubbed?

A. I do not know as to that. The tub is stationary.

XQ315. You testified before that the clothes were rubbed on the corrugations on the interior of the tub. What caused you to change your notion of that now?

Mr. Bristol: Let me have a reference to that now. Are you referring to his previous deposition?

Mr. Lane: The previous deposition, on page 111.

A. I do not know that I have changed my notion.

XQ316. What is the fact?

581 A. It is my opinion now that the clothes are forced against the tub sides by the water currents.

XQ317. The 1900 Company commonly has for the last ten years been making a machine with a three-vane agitator, like Defendant's Deposition Exhibit 12 (handing to witness), has it not?

A. Yes, the company is producing machines of that general type.

I do not know whether the shipments made to Mr. Holmes on October 8th, 1921, were ever sold to a user.

He was our representative, as I recall it, at San Francisco.

I have not any knowledge concerning the disposition of those two machines shipped to him.

XQ321. Do you ever recall seeing this machine, Defendant's Deposition Exhibit 8, actually operated in any other way than with the rub-board mounted on the side of the shaft and top of the cover, personally?

A. I cannot recall a great deal about it.

XY322. So far as you know you never saw it operated in any other way except with the dolly mounted on the sliding shaft, did you?

A. I am not perfectly clear.

My recollection is that the machine was an experimental model, and it is my belief that it had various tests made on it.

582 I probably saw them. I am unable to recall them. I collaborated with Mr. Doughty in the development and building of this Form 4 machine. I was the plant superintend-

ent and my efforts were probably largely in the factory. I cannot recall just what I did. I am unable to recall specifically in detail on that now.

XQ330. Do you know why the rub-boards in these machines were made substantially of the same diameter as the interior of the tubs? I am speaking of Forms 1, 2, 3 and 4.

Mr. Bristol: I object to the question on the ground that it assumes as a fact something which is not a fact, namely, that the diameter of the agitator is substantially the diameter of the inside of the tub. I think you'd better rephrase your question, Mr. Lane.

Mr. Lane: I will ask for an answer.

A. The diameter of the agitator was arrived at as the result of tests, and in line with the power available and the work to be done as the result of development.

XQ331. As a matter of fact, you used substantially the same diameter of rub-board with respect to the diameter of the tubs, as you did in the oscillati[illegible] type machines that The 1900 Company was making when you came with them, didn't you?

583 A. Well, the agitators in all of these four models are somewhat smaller than the tub.

XQ332. They are substantially the same relative diameters, similar to the diameters of the rub-boards and tubs in the oscillating tub type of machine, aren't they?

A. That question is not clear to me.

(XQ332 read by the reporter.)

A. Are you referring to the agitator disc at the top?

XQ333. Yes.

A. Which is located on top?

XQ334. Yes, of the old form machines, the oscillating tub type of machine.

A. I have not checked that, but I believe they are substantially of the same diameter.

XQ335. That is, you used in the Forms 1, 2, 3 and 4 machines substantially the same diameter of rub-boards to tub diameter as you did in the early oscillating tub type machines?

A. I would want to measure them, to enable me to state definitely.

Upon measuring I find the agitator disc in the Form 1 exhibit is approximately 18 inches in diameter. (Witness refers to Exhibit 2-A (now Defendant's Exhibit 27)).

584 The diameter of the inside of the tub at the top is approximately 20 inches. The inside diameter at the water line is approximately 21 inches. The diameter of the bottom inside is approximately 24 inches. I will correct that last, and make it 22 inches at the bottom.

Now, measuring the diameter of the agitator disc in Form 4 it is approximately 23 inches. The tub is approximately 24½ inches. The inside diameter of the tub in Form 4 is approximately 25 inches.

The agitator disc on Form 3, Exhibit 103, (Now defendant's Exhibit 20), is approximately 17½ inches. The tub diameter is approximately 25 inches.

XQ342. Have you any way of measuring the part that I asked about—the diameters of the rub-boards at the top of the oscillating tub machines, on the interior of the tub?

A. You are referring to what, hand machines?

XQ343. Either hand or power, of the oscillating tub type.

A. I do not know of any way of determining that diameter now.

XQ344. As a matter of fact, they were substantially
585 the same relative diameters with respect to the tub as in the Form 4 machine, to your best recollection; isn't that true?

A. Well, they might have been. I cannot fix the diameter, however, of that agitator.

XQ345. Look at the cuts in this Defendant's Deposition Exhibit 10, and state as best you can what the fact is from that (handing to witness)?

A. I do not find any dimensions given here.

XQ346. If you take the picture that shows on page 3, wouldn't you say that has a rubbing disc at the top there substantially of the same diameter, at the top of the tub, as in Exhibit 2-A and the Form 4 machine (handing to witness)?

A. In the cut on page 3 I am unable to see the agitator disc. There is a tub cover resting on the top of that tub, I believe.

XQ347. Don't you recall what the approximate relative position of the tub was, in that machine, with respect to the diameter of the rub-board at the top?

A. I would estimate that it was within one or two inches of the same diameter.

XQ348. That is, they are substantially the same as in Exhibit 2-A and Form 4; is that the fact?

A. Approximately.

586 I do not know of any Form 3's listed in that tally book. I do not have any knowledge of how many were sold, of that type. Other records would have to be checked for that. I believe those sales were comparatively small, as compared with the Exhibit 2-A machines.

To the best of my recollection we first began manufacturing machines of the three-blade type, like that shown in Defendant's Deposition Exhibit 12, in 1929.

The speed of the oscillations in that machine was approximately 60 strokes, or 60 cycles, over and back. That is, it moves 60 times in each direction in a minute. That is my recollection. I would say there are several reasons for oscillating the impeller at that speed. They are smaller in diameter. All the water action possible is desired.

587 XQ358. What else?

A. I do not think there is anything else just now.

XQ359. In that machine is the water whipped violently, so as to cause flows of current outward, upward, inward and downward through the center?

A. Yes, I believe that is substantially the circulation.

XQ360. The water is very violently churned in that machine, is it not? A. Yes.

XQ361. And the clothes move about in the tub in a very vigorous fashion, so that the water action is able to take effect on them?

A. Yes, the clothes are circulated by the water.

XQ362. And the purpose is to keep as violent a circulation as possible of the clothes in that machine, isn't it?

A. Yes, the purpose is to circulate the clothes and subject all of them to as much action of the water as possible.

XQ363. And to keep them well spread out and distributed through the tub, so that the water action can cleanse them as thoroughly and in as quick a time as possible?

A. The degree to which they are spread out in the
588 tub would depend entirely on the loading of the machine.

XQ364. Isn't that the purpose of the machine as you operated it and advocated to the trade?

A. Yes, I would recommend that type of loading.

XQ365. So that the clothes rolled over and over very frequently in the tub, and are subjected to this violent water action that you referred to? A. Yes.

XQ366. The impeller blades in that machine are approximately five inches high, are they not?

A. I do not think they are that high, Mr. Lane.

XQ367. About how high?

A. It depends on which portion of the blade you want to measure. At the post the blade may run nearly to the top of the post, but at its extremity I do not believe they are over two and a half inches, or in that neighborhood.

XQ368. Do you feel sure of that, or is that just your approximate estimate? I thought you measured them before and found them higher than that. I thought the testimony before shows they were five inches, approximately.

A. Well, I am unable to recall that.

XQ369. You do not know what the height is exactly?

A. I know it varies with different agitators.

XQ370. The ones shown in this Exhibit 12.

A. At what point do you want me to determine the
589 height of the blade.

XQ371. The most effective height for the water movement.

Mr. Bristol: Won't you specify it, please—at what point you want him to give the estimate?

Mr. Lane: He ought to know.

A. I cannot answer the question.

XQ372. Let us take the height here at the highest point, near the edge of the disc (indicating). What would you say that height is in the machine shown in the cut, of The 1900 Company's manufacture, Exhibit 12?

A. In that particular agitator I would estimate about two inches.

XQ373. Then taking it at the mean line of the curve, from that point to the top?

A. At that point it might run up to 3½ or 4 inches.

XQ374. That is your best estimate of it now?

A. That would be my estimate.

XQ375. But you have not measured it?

A. I have not measured it lately.

XQ376. The diameter of the disc, I believe you say, is much less than the diameter of the tub in that construction Exhibit 12? A. I would consider it so.

XQ377. How much less? Have you any idea what the relative proportions are?

590 A. We have agitators of—

XQ378. I am speaking of this machine.

A. Well, I would estimate the diameter of the disc portion of that agitator as about 12 inches.

XQ379. What is the diameter of the tub?

A. About 21 inches, I believe.

XQ380. Is the purpose of having the agitator smaller than the tub so that you get a free roll over the zone outside the agitator, and the clothes are more easily flexed about as they move in the tub?

A. I would say there are probably many factors that enter into that.

XQ381. What are they?

A. The cost of the part would be one, perhaps.

XQ382. What is the real purpose in the operation, in the washing operation?

A. I do not know as I can answer the question.

XQ383. You do have a very free roll over the zone outside the impeller blades in that machine, do you not; so that the water goes around and forces them out, and gives them a chance to turn over and spread out, if this machine is loaded as you indicate that you would like to have it?

A. Yes, sir; it is a comfortable area, depending on the diameter of the tub.

XQ384. I am speaking of the diameter here shown, of the agitator—the agitator in the cut here shown.

A. Yes.

591 XQ385. And that enables the water currents to flow outwardly from the impeller in a free zone where the water carries the clothes out with it, and up around, violently?

A. I can only answer that by saying there are several factors that enter into the circulation: the volume of clothes, the amount of water, the nature of the clothes.

XQ386. I am talking about the amount of clothes that you indicate as the preferred operation there, which you just testified about.

A. I do not know that I can say that space that you are referring to is the major factor, but—

XQ387. I am not asking whether it is a major factor, but asking whether it is a factor.

A. It is a factor.

XQ388. And enables it to give a free roll to the clothes, as free as you can obtain in that type of machine, as far as you know, doesn't it?

A. It makes a suitable circulation possible.

XQ389. And it helps in distributing the clothes through the interior of the tub, while being acted upon by the water, doesn't it?

A. I do not understand that question.

(XQ389 read by the reporter.)

A. I cannot answer that question.

XQ390. You do not know?

A. I do not understand it.

592 XQ391. When this machine is loaded as you indicate so that there is a free roll-over of the clothes, how often do the clothes move around inside the tub, or a piece of cloth—how many times?

A. I don't recall the frequency with which that turn-over occurs now.

XQ392. It goes over vary rapidly, doesn't it?

A. It goes over rapidly enough when properly loaded to wash the clothing satisfactorily.

XQ393. And it washes all of the clothes thoroughly clean in a very short time, doesn't it? A. I believe so.

XQ394. Do you know how long, approximately, it takes to wash a tub full of clothes loaded as you indicate, with that machine?

A. I would say 15 to 20 minutes, depending on the nature of the soil or dirt.

XQ395. Don't you know that you advertise that it takes 6 minutes and not to exceed that? A. That may be so.

Mr. Bristol: Do you know anything about it?

The Witness: I do not recall it.

XQ396. You do not know anything about it—the length of time it takes?

A. Well, I know how long it takes to wash an average load of clothes, I believe.

593 I think that we have test records which would show that. I do not recall ever testing this particular model myself.

XQ400. So you do not know how long it does take to wash the load, when there is a free roll-over in the tub—I mean by actual test? A. I do not recollect any.

We made tests to determine the length of time to wash clothes in the Exhibit 2-A machine. Tests were conducted to determine the efficiency of that machine. I am unable to recall any particular tests I may have made. I do not know of any records that we made. [—]

594 was done or attempted to be done in that machine?

A. As far as I know it was not necessary to follow up with washboards. Are you referring to hand washboards?

XQ406. Yes. You do not know about that?

A. Except in the case of particularly soiled clothing, workmen's heavy clothing, or something of that sort. It might be necessary.

XQ407. Following your discontinuance of the manufacture of Forms 1, 2, 3 and 4 machines, what if any experimentation did you carry on in The 1900 Company before you went to another type?

A. I am not just clear now on that period.

XQ408. You testified before concerning a lot of tests that you made in the interim between 1922 and the time that you put out your machines like Defendant's Deposition Exhibit 12. Just what experimentation did you carry on during that period in perfecting that machine?

A. I am not clear on that period.

XQ409. You do not recall now?

A. I have some recollection of a small cataract machine.

XQ410. Don't you have any recollection of your single-vane agitator and the triple-vane agitator machines, the experimentation?

A. Yes, I believe the single-vane development was somewhere in that period.

XQ411. You had a great deal of experimenting before.

595 My recollection is that that experimentation extended over quite a time.

The 1900 Company makes that single-vane type at the present time; we are still manufacturing some of those machines. Rather limited quantities. Our production is mainly of the general type of machine shown in this Defendant's Deposition Exhibit 12.

With machines like Defendant's Deposition Exhibit 12 our efforts are in the direction of creating as great a flow of wat around through the clothes as possible, in the use of that machine.

XQ416. And I suppose that you made numerous tests to obtain the best relation of parts and speed, shape of the tube, etc., to attain that result?

A. Many tests are conducted on all new models. That type of machine would not be any exception to the rule. Numerous tests have been made.

XQ418. But you did in fact do it in connection with that? You say you personally know about these tests.

596 A. Yes, numerous tests have been made.

XQ419. And you have as a result of those tests put out the machine with the three-vane agitator, in which you tried to secure as great a flow of water around through the clothes as possible; is that so? A. Substantially so.

XQ420. During the time that you were carrying on the experiments with the single-vane agitator machine, and also

with the machine like Defendant's Deposition Exhibit 12, you had one of the Maytag gyrator type of machines in your factory, did you not?

A. I cannot recollect definitely on that point now.

XQ421. You have testified before, at page 114, in answer to RXQ314: "Do you recall having one of the Maytag machines in operation during the experimental work to observe its operation in comparison with your other tests?" You answered: "I do not recall specifically having a Maytag at that time, but I believe we have had Maytag machines.

"RXQ315. Had them approximately that time?

"A. We had them approximately that time."

Is that your recollection now?

A. I cannot recollect having the Maytag machine at the time you speak of.

XQ422. You can recall if you think, can you not, that
597 you had the Maytag machine during practically all that period?

A. I can recall having the Maytag machine in the plant, but I am unable to say just when.

XQ423. Didn't you correctly state your recollection at the time you tesitfied before, when you said you had them approximately at the time you started to experiment with the single-vane agitator?

A. That was the best of my recollection at that time.

XQ424. Do you think it is the best of your recollection now?

A. I do not know that my recollection is the same now as it was several years ago.

XQ425. You had this machine in the experimental room, too, didn't you, during some of that time?

A. Yes, I believe we had one in the experimental department.

XQ426. And you operated it there, didn't you?

A. Yes, we conducted some washing tests with it.

XQ427. The 1900 Company is not manufacturing any machines like Forms 1, 2, 3 and 4 at the present time, is it?

A. Not to my knowledge.

598 Redirect Examination.

By Mr. Bristol:

In the "1900" Model 400 machine, as illustrated in Defendant's Deposition Exhibit 12, I expect that the agitator does rub the clothes some.

The water actions in the Model 400 and the Form 4 machines are similar in that they are thrown out centrifugally

to the walls of the tub, then up along the tub sides and in at the top. In the case of the Model 400 the currents are then down around the centre of the agitator post, and in the case of the Form 4 they might be somewhat off centre or irregular in their action.

RDQ430. Mr. Lane on his cross-examination asked you a question, with regard to the Form 1, Exhibit 2-A machine, and the Form 3, Exhibit 103, machine, as to whether those were the only models put out by The 1900 Company in accordance with your patent No. 1,240,826; and I understood you to say that they were. Will you please refer to the catalogue, Defendant's Deposition Exhibit 10, and say what sort of agitator the Form 2 machine had (handing exhibits to witness)?

A. I don't recall the earlier question. I think I previously mentioned that there was a Form 1, Form 2, Form 3 and Form 4. Page 8 of this catalogue describes Form
599 No. 2. It says of "similar construction" to the machine shown on page 7, which represents the Form 1 agitator.

My recollection is that the Form 2 machine as put out by The 1900 Corporation did correspond to the Davis patent No. 1,240,826, so far as the washing device was concerned.

I believe the water action in each of those Forms 1, 2 and 3 machines is substantially like that described in my patent No. 1,240,826. This machine Defendant's Exhibit 103 [now Defendant's Exhibit 20], has a smooth wall tub.

The effect of the water action in the Exhibit 103 [now Defendant's Exhibit 20] is to force the clothes through the circulation generally. The water currents carry them out to the tub sides and down, then along the bottom of the tub towards the center; from there up to the agitator again.

The water action in the Form 4 is very much like that in the Form 3, except that the agitator is located at the bottom of the tub and forces the water, the lower portion of the water, out to the tub sides, where it travels upward along the tub sides, then in at the top, and then down at approxi-
600 mately the center of the mass.

If the machine is loaded with water first and the clothes added gradually they will follow those same water currents.

RDQ438. Which is the more expensive, the Model 400 machine such as shown in Defendant's Deposition Exhibit 12, or the single-vane agitator type?

A. The models vary in so many details that it is difficult for me to state. Generally I think the cost on the single-vane machine is somewhat higher.

The 1900 Company manufactures washing machines for Sears, Roebuck & Company, and the machines that are made for the Sears, Roebuck Company are somewhat along the line of that Model 400 illustrated in Defendant's Deposition Exhibit 12; they are similar in some respects to the Model 400.

RDQ441. What is the general reputation, as to price policy, of Sears, Roebuck & Company?

A. I do not know that I can answer that question.

601 Recross Examination.

By Mr. Lane:

RXQ442. I notice in the specification of your patent, line 28 of page 1, column 1, the statement: "A still further object of my invention is to provide means in connection with the agitator disc to prevent churning of the washing fluid." Just what is that meaning?

A. I believe that refers to the churning action of the water, without circulation.

RXQ443. I am asking you what is the means that provides for that?

A. I would say the particular arrangement of ribs on the underside of the agitator.

RXQ444. Does the round shape of those have anything to do with that?

A. You are referring to the rounded top of the ribs?

RXQ445. Yes.

A. I believe the ribs are rounded to present a smooth, harmless surface to the clothes.

RXQ446. That is why you provided that, was it?

A. That would be one reason.

RXQ447. Is that the reason why you provided that kind of rib?

A. In the patent the gentle rubbing action is mentioned, and you have to have rounded corners to assure that.

RXQ448. That is what you provided them for, was it?

A. I believe so. If you are referring to the rounded corners.

602 RXQ449. I am referring to the rounded surface of the ribs themselves. A. Yes.

Redirect Examination.

By Mr. Bristol:

RDQ450. Just to clear up a point, Mr. Davis, will you read from your patent No. 1,240,826, the passage beginning on the first page at line 79, and running down through line 86. Just read that into the record, please.

A. "Because of this peculiar arrangement of ribs 4 and 6, the fluid is caused to flow in lines similar in shape to an

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elongated loop depressed intermediate its extremities. The constancy of such flow lines eliminates eddies and other current irregularities preventive of a high degree of efficiency."

RDQ451. Is that the sort of thing that is referred to in the early part of the specification, to which Mr. Lane directed your attention, where it is stated that a further object was to prevent churning of the washing fluid?

A. I don't know that I can connect those two things.

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603 ROBERT D. QUINN, a witness for the defendant. Testimony taken by deposition at New York, October 25, 1937.

Direct Examination.

By Mr. Bristol:

My name is Robert D. Quinn and my present residence North Lebanon, Pennsylvania; I am a partner in the Brown-Dorrance Electric Company, Pittsburgh.

In January, 1934, I was assistant to general manager of the Nineteen Hundred Corporation, Binghamton, N. Y., in charge of sales. My residence at that time was Binghamton, New York.

I am the same Robert D. Quinn whose deposition was taken at Binghamton, New York, in January, 1934, in connection with a suit by the Maytag Company against the Brooklyn Edison Company.

I have no connection with either the Maytag Company or the General Electric Supply Company, nor any interest, financial or otherwise, in the outcome of the present suit.

My connection with the Nineteen Hundred Washer Machine Company commenced either the first or second day of June, 1919. I was connected with the Nineteen Hundred Washer Company until July 5, 1936, as assistant general manager and assistant general manager in charge of
604 sales, looking after general commercial work.

I believe that these papers marked Defendant's Deposition Exhibit 9 are the same papers that I got out for Mr. Behan in 1934. Yes, these are the same papers. Mr. Behan was president of the Nineteen Hundred Corporation.

I got those out in 1934 in connection with a patent—it was not a suit against the company, but it was in connection with a patent suit of the Maytag Company, I believe, against the Brooklyn Edison and the Easy, Easy Washer.

In this sheaf of papers there are copies of letters dated January 11, 1921, January 15, 1921, and February 16th and

17th, 1921, to Mr. W. Lee Holmes; they are file copies, as nearly as I can see, taken from the files of the Nineteen Hundred Corporation. That is where I found them at the time I got these together.

At the foot of those copies of letters there is the name "Mr. Barker". Mr. Barker was the general manager of the Nineteen Hundred Corporation at Binghamton, New York. His initials were Harry L.

At the time that I went with the Nineteen Hundred Washer Company, they were selling a Cataract and the Standard Electric and an agitator type of washer which we called
605 Form 1, Form 2 and Form 3, and some hand machines.

A washing machine which has been marked Defendant's Deposition Exhibit 2-A [now Defendant's Exhibit 27] in this case was a Form 1 agitator machine.

A machine which has been marked Defendant's Deposition Exhibit 103 [now Defendant's Exhibit 20] in this case is the Form 3 agitator.

Another machine, which has been marked Defendant's Deposition Exhibit 4 [now Defendant's Exhibit 29] in this case, is the Form 4. It started out as Form 4 and then they called it a Whirlpool for a while. That is different than the other machine.

The difference is that the agitator is on the bottom in this case here. The agitator is on the top on the Form 3 and also on the top in the Form 1.

The photograph which has been marked Defendant's Deposition 18 in this case shows the Form 4 Whirlpool.

The photograph marked Defendant's Deposition Exhibit 10 in this case shows Form 3. I wouldn't swear to it as regards to whether I actually located it or not. Exhibit 10 here shows the Form 3 agitator machine.

Respecting introduction of new models by the Nineteen Hundred Company when they were ready for introduction, as a general rule we had our principal dealers or distributors in and we showed them what we had, and we demonstrated it to them.

606 We made such demonstration with respect to the Form 4 agitator machine.

I believe it was in the fall of 1921 we had quite a few dealers in from all over the country and we showed them the new

Form 4 submerged agitator machine, and I demonstrated before and to that crowd of men that were there.

As a rule we would take and show them the machine and explain the principles of the machine and tell them what we had in mind in regard to putting it into the commercial end, and then we would fill it full of water and let it run without any clothes in and then gradually put clothes into the machine. In that way, why, we should show them what would actually occur in the home.

We made such a demonstration of the Form 4 machine at that time.

Q32. Can you describe the water action as you observed it at that time?

A. Well, you had a water action there with the water being thrown to the side of the machine and then up, but we didn't have uniformly spaced blades all around the agitator, and on one side there were several blades left out, and that had a tendency to give the clothes a greater turning over, rolling over.

In the course of our demonstration we added clothes to the water in the machine.

607 As the machine was operated it threw the clothes out to the side and then the clothes, being buoyant, naturally would then come on up and then come across and go down across on the other side; in other words, a kind of rolling effect all around wherever you had the maximum amount of water coming up on the side of the machine.

Q35. Will you examine the machine Defendant's Deposition 4 [now Deft's. Ex. 29] and tell us what the serial number of that machine is. A. S-1033.

This book which has been marked Defendant's Deposition Exhibit 11 in this case is a tally book in which the serial numbers of the washers were kept, of the Form 4.

This is a book of the Nineteen Hundred Corporation.

Q38. Can you determine from that book or otherwise when the machine Exhibit 4 was shipped?

A. Yes, sir; this 1033 was shipped January 18, 1922.

The first shipment of a Form 4 machine was October 8, 1921.

Referring to two invoices which have been marked Defendant's Deposition Exhibits 13 and 14 in this case, this

Invoice 9959-A shows shipment of two of the Form 4 agitators to W. Lee Holmes on October 8, 1921, and the one marked invoice 470 shows three machines shipped to W. A. Osgood of Form 4 on January 18, 1922.

608 I can identify these invoices as from the regular records of the Nineteen Hundred Corporation. I got them out myself in 1934.

There is a tieup between the machine Exhibit 4 [now Defendant's Exhibit 29] and the invoice Exhibit 14; it shows that on invoice No. 470 that your Exhibit 4 [now Defendant's Exhibit 29], that is the same machine S-1033, had been shipped to Osgood. Osgood was the dealer in Syracuse handling Nineteen Hundred products.

The Holmes referred to on Exhibit 13 was Lee Holmes, he was our Pacific Coast representative.

When I located these invoices in 1934, as I remember, these invoices were inside of the regular monthly binder for a given month, and I took them out of that binder.

The machine Exhibit 4 [now Defendant's Exhibit 29] is, in general, representative of other Form 4 machines sold by the Nineteen Hundred Corporation. There may have been some minor changes as machines came along, improvements made.

The machine 2-A [now Defendant's Exhibit 27] is representative of the products of the company; that is representative of the Form 1.

The machine Exhibit 103 [now Defendant's Exhibit 20] is also representative of the products of the company.

609 I think I looked up once before how many Form 4 machines were sold by the Nineteen Hundred Corporation, and there were approximately 700, more or less; maybe a little more.

A drawing which has been marked Defendant's Deposition Exhibit 9-A in this case shows a drawing of the submerged agitator of the Form 4 machine.

I found that in the files of the Nineteen Hundred Corporation.

I can identify this dealer's catalogue which has been marked Defendant's Deposition No. 10; it is a catalogue of the Nineteen Hundred Corporation showing the different models of washers.

Cross-Examination.

By Mr. Lane:

I recall when that catalogue Exhibit 10 was put out by the Nineteen Hundred Corporation; it is marked in there November, 1919.

That catalogue didn't show the complete line of washing machines being sold by Nineteen Hundred, because they didn't have the Form 2 and Form 3 cuts ready in there.

XQ58. I say, did it show the complete line that it was selling at that time, November, 1919?

A. Oh, yes; but I remember that was one of my first jobs there, getting that catalogue out.

XQ59. That is all I was trying to find out, as to whether this would show the complete line as of the date November 1, 1919.

610 A. Yes.

XQ60. They did not manufacture any other machines than those shown in this booklet, at that time?

A. Well, with the exception that you haven't got the machine shown for this Form 2 and Form 3. We were shy the cuts, and that is why we just put the explanation in there.

This catalogue refers to all of the machines that we were then making. The only thing that I am talking about is that on pages 8 and 9 it does not show the cuts of the two machines. Otherwise they are illustrated by cuts.

I can explain how the machines shown on pages 2, 3 and 4 are operated. This machine here on page 2, that was a gravity machine. You were supposed to grab hold of the handle there and pull it around. As you pulled it around it worked it on these two toggles underneath, and that would have a tendency to squeeze the clothes between your agitator here and the bottom of the tub. In other words, she would rise up as you would swing it back and forth.

XQ66. That is, rub it very much like the old-fashioned washboard? A. Just with a squeeze in there.

XQ67. With a squeee in between the two?

A. Yes. That is on the gravity machine.

611 The one on page 3, that is a junior washer, and that just simply went back and forth; it didn't rise up and down; just horizontal. The clothes were acted on in that machine by virtue of an agitator that was supposed to float up and down on the top here (indicating), and then you had your ribs underneath the agitator and you had ribs on the bottom of the tub,

XQ70. So that the ribs on both the bottom and top rubbed the clothes as they moved around the mass in the tub?

A. Yes, just in between.

The one on page 4 well, that operated very similar to the gravity machine shown on page 2, only it was a cheaper type machine. It didn't have any place for the wringer. The same principle and the same idea, only that you see this stem (indicating) coming up. That had a yoke, and on that yoke was fitted the agitator, and then that slid up and down, depending on the volume of clothes that you had in there.

XQ72. In that machine the clothes were squeeed between the rub boards and rubbed together both top and bottom as the machine operated?

A. That was standard practice.

612 The one on page 6, well, that was applying, you might say, electric power to your—I would say to your standard washer as shown on page 4.

The washing operation is the same as on those preceding machines.

The tub went back and forth.

XQ75. The clothes were scrubbed between the upper and lower ribs?

A. Well, you had the same type of construction. The end of that steel rod was very much similar to this one here, Form 1.

XQ76. That is, Exhibit 2-A?

A. This is the first application of electric power to it.

In the one on page 7, the mechanism was put on the top and the tub was stationary, while on this one here (indicating) your tub oscillated back and forth. Now, the Form 1 machine—this is the one on page 7—is the Form 1 that you see there, Exhibit 2A [now Defendant's Exhibit 27].

And the idea was to have a stationary tub so that it would not be swinging around out in the open, and they just used the same principle of washing they used before; just simply had that agitator on the top here, and then the bottom was corrugated or ribbed or flutes put in there.

The agitator, when it was put in agitation, just turned back and forth. I could not tell you the exact degree.
613 I don't know how wide a degree of turning. But I say it operated on the principle of washing as the earlier machines I have testified about.

Form 1 had corrugated interiors such as that Exhibit 2-A shows; except your Form 3, of course.

XQ84. I am talking about the Form 1.

A. Yes, they had those ribs at the bottom.

We sold quite a few of the Form 3 washers. I couldn't tell you how many without checking over. There were more of Form 1, because they were cheaper. I couldn't tell you about how many Form 1 were sold without going over the records.

XQ88. In that machine in operation did the rub board, the top member, move down onto the clothes so it compressed them, in operation?

A. Oh, there naturally would be some weight coming down there, because this would not float right on top of the water. It is the weight here that would have a tendency to go down a little bit into the water, and naturally if you have a bunch of clothes there it would go right down on top of the clothes.

614 A. Compressed them some, yes.

XQ90. Did the Forms 2 and 3 operate in substantially the same manner as Form 1? A. Yes, sir.

XQ91. That is, the same principle of operation?

A. Except that—you had the same principle of operation, only on the Form 3 you had a copper tub; on the Form 2 you had the Form 1 tub, but it was on a metal base; just a matter of what the person would want.

Form 2 was the same as Form 1, so far as the tub was concerned?

A. Yes.

XQ93. And so far as the agitator and rub-board were concerned? A. Yes, sir.

XQ94. You were familiar at that time generally with what they called rub-board type machines, were you not?

A. I don't really get what you mean.

XQ95. At that time you were familiar with the general rub-board machines that were sold by other manufacturers throughout the country?

A. Oh, yes; the peg type and the dolly types.

XQ96. What were the types of machines that were being sold at the time you were selling the Form 1 machine, generally recognized in the trade?

A. Oh, there was what we used to call a milk-stool,

615 which was just simply a disc and then had a lot of pegs down. As to its operation, well, naturally the prongs or the legs of the stool would get down in your

clothes, and as that would turn back and forth it would pull your clothes right through the water.

I think those machines generally had corrugations on the interior of the tub. I wouldn't swear to that. I didn't know of any that did not. You had to have some kind of corrugation there. Everybody thought you had to have a rub-board effect, that is all.

XQ100. That was the purpose of putting the corrugations in your machine, at any rate?

A. Yes, I imagine it was, because this was there at the time I went with the company.

The Form 4 was not intended to operate on the same principle that I have described. You see, there you put your agitator underneath, while on the Forms 1, 2 and 3 you had it on top, and it was just—I would say it was trying to get away from as much wear and tear as you could possibly get away from on the clothes. Naturally it is an improvement and superseded the other three.

I do not know at what time the largest sales of the
616 Form 4 machine took place, but that should be a matter of record. The tally book shows all 1922 here. It shows a few here in 1923. From looking at that book, generally, I would say the sales dwindled to almost nothing in the fore portion of 1923. That is, they practically discontinued the manufacture and sale at that time. Well, they didn't discontinue it because it still shows shipments into April, 1924.

They weren't practically discontinued, as far as manufacture and sales were concerned, as early as January, 1923; there is quite a few of them going out, not many, though, in January, 1923. I would say there were only about 60 sold during the year 1923, as nearly as I can check from the tally book without going into detail.

XQ112. Then, wouldn't you say that it was fair to say that you had practically discontinued the manufacture and sale of that machine at the end of 1922?

A. On that basis, yes, but I imagine we manufactured them spasmodically as the calls came in.

XQ113. But you do not find more than 60?

A. No.

If there were 700 made, then, as far as I know, there were practically 640 machines made during 1922. There were
617 quite a few of them made in 1921. There were 31.

As to the first one shipped after the one shipped to Holmes on October 8th, from this record here it looks like

machine Serial No. 1033 was shipped on October 17th. I couldn't say as to whether those machines that were shipped to Holmes were ever sold by him. They were never paid for by him, he was our representative. They were just sent out to him for samples to try to get a couple of syndicate contracts. He did not get the syndicate contracts as a result of that. The purpose of sending those machines was to see if he could get a syndicate contract based on the operation of the machine, and also a lower price than the standard family size Cataract, which was high in price at that time.

It is my recollection, although I would not swear to it, that the Cataract was selling around $175. We brought this Form 4 out to sell for $145, and they thought they could meet it on the basis of cost.

We discontinued the manufacture of the machine after selling some 700 because, well, I think the costs were high, and also we were coming along with a single vane circulator
618 and also we built up a junior size Cataract, and in that way, why, we had more machines, don't you see, so that we didn't ship as many models of a given machine as we had been shipping prior to that, because the family size Cataract was getting too large and the dealers wanted to get a junior size, a 6-pound capacity machine.

I couldn't tell you what manufacturing facilities we had in 1922 and 1923, as far as the number of machines per day was concerned. Mr. Behan would have all that information like that. Several hundred a day. I would say as many as 500. We could have made as many as 500 machines a day.

XQ129. So this sale of the number of 700 would not be more than a day and a half production for you if you wanted to put your production—

A. Oh, if we had everything rolling, yes, but you can understand that in a production like that you have half a dozen different models coming through, why, you just can't turn them out that way.

XQ130. I understand that, but if you wanted to do it you could have manufactured them in a day and a half or so?

A. Theoretically you could do it, yes; stop production on all the other models.

We discontinued the manufacture of the Form 1, 2
619. and 3 machines because they were kind of out-styled, out-moded, and we were making a drive on the Cataract, and you take the Form 1, it was not so handy from the standpoint of the woman. There is a heavy lid there and a lot of mechanism on top to lift up.

The Form 1 was slower in washing than the single vane; the single vane Whirlpool is a very fast washer. I would say you would cut the Form 1 washing time almost in half with the single vane. You can do a better job with the single vane than you would with this. This is, a better job in half the time approximately.

That is due primarily to the fact that you are getting a faster current of water and it means you are getting more water through your clothes, because, after it is all said and done, washing is either getting the clothes through the water or the water through the clothes, and in a single vane you get a lot of water through the clothes and you keep presenting new surfaces, with the result you will wash them faster than you will with your Forms 1, 2 and 3.

XQ141. That is where you had this slower action and the slower movement of the water and your rubbing and pressing contact in the Form 1?

A. That is right.

After the Nineteen Hundred Company discontinued
620 the manufacture of the Forms 1, 2, 3 and 4 machines and started to manufacture the single-vane they never manufactured anything like the Forms 1, 2, 3 and 4.

XQ144. In the Form 1 machine was there any substantial rubbing of the clothes in the machine?

A. All machines rub clothes, as far as that is concerned, but the earlier types of washers in the washer industry, why, I guess every machine on the market rubbed clothes more than they do today.

XQ145. They depended largely on the rubbing in the old-fashioned machines and entirely on the water action in the present ones?

A. Yes, sir.

XQ146. That is the way you distinguish them?

A. That is the way I would distinguish it.

621 December 2, 1937.

Mr. Bristol: I offer in evidence certain exhibits which were marked in the course of cross-examination.

(Defendant's Exhibit 1, a copy of the Snyder patent, No. 1,506,783, received in evidence.)

(Defendant's Exhibit 5, a copy of the Misner patent, No. 1,611,767, received in evidence.)

(Defendant's Exhibit 6, a copy of the Davis patent, No. 1,748,442, received in evidence.)

(Defendant's Exhibit 7, directions for operating the Maytag machine, received in evidence.)

Mr. Bristol: I offer in evidence the documentary deposition exhibits which were included in the two books that were marked Defendant's Exhibits 38 and 39.

The Court: They are received in evidence with this understanding that if an objection should be sustained to any reference in reading the deposition, that part would not be received.

(Defendant's Exhibit No. 27, a 1900 Form 1 machine, received in evidence.)

(Defendant's Exhibit 28, a Miller corrugated tub machine, received in evidence.)

(Defendant's Exhibit 29, a 1900 Form 4 machine, received in evidence.)

(Defendant's Exhibit 30, a copper tub model, received in evidence.)

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622 HERMAN W. DOUGHTY, a witness for the defendant. Testimony taken by deposition at New York, October 26, 1937.

Direct Examination.

By Mr. Bristol:

My name is Herman W. Doughty. I live at Binghamton, New York, 153 Grary Avenue; and I am a mechanical engineer with the Binghamton Washing Machine Corporation. In January, 1934 I was mechanical engineer with the Norge Corporation of Detroit. I was living at Detroit.

I am the same Herman W. Doughty whose deposition was taken in Binghamton, New York, in January, 1934 in connection with the suit of the Maytag Company against the Brooklyn Edison Company. I have no present connection with the Maytag Company or the General Electric Supply Corporation. I have no interest financial or otherwise in the outcome of the present suit that I know of, unless it might concern the Binghamton Washing Machine Corporation. None that I know of really.

My connection with the Nineteen Hundred Company at Binghamton commenced in November, 1919. The business of that company was the manufacture and sale of domestic

washing machines. In November, 1919 there were several models of the hand-operated wooden tub machines, two or three models of power-operated—I will change that; two models of wooden tub machines, power-operated, and one model of the metal tub machine, power-operated, those three preceding ones having an overhead agitator, and then one metal machine of the oscillating type. There was a particular name by which these machines with the overhead
623 agitators were known in those days; they were called the Form 1, 2, and 3 agitator electrics. This machine here with the wooden tub is one of those; the one marked Defendant's Deposition Exhibit 2-A [now Defendant's Exhibit 27]. That is representative of Form 1.

There are other machines in this room that I can identify as representative of the Nineteen Hundred Company's production at that time. The copper tub machine with the metal legs is the Form 3 machine. I refer to Defendant's Deposition Exhibit 103, [now Defendant's Exhibit 20].

I can identify the catalogue which has been marked Defendant's Deposition Exhibit 10. This is a catalogue which was used by the Nineteen Hundred Corporation to show their line of washers at approximately the time when I went with them. I identify a photograph of a metal tub machine which has also been marked Defendant's Deposition Exhibit 10 as a photograph of the Form 3 agitator electric.

After I came with the Nineteen Hundred Company the first problem I directed my attention to was the design of an ironer, a domestic ironer, and then the improvement of some of the mechanism of the agitator—pardon; of the oscillating machine called the Cataract, and then the development of the Form 4 washer.

You show me a sketch, a photostatic copy, which has been marked Defendant's Deposition Exhibit 7 in this case. The original was a sketch which Mr. Behan gave to me in the early part of 1920. Mr. Behan's full name is Thomas W. Behan. When I first went with the company he was
624 factory manager; subsequently became president of the company. I am able to identify the handwriting on this sketch where it says "Agitator Electric, New Design"; that is Mr. Behan's handwriting. They are Mr. Behan's initials just below that line. The note at the foot of the sketch is in my handwriting. That portion which is in my handwriting reads:

"Scheme of the revolving tilting agitator added 9/16/20, H. W. D."

Q23. Will you tell us, please, what you did in connection with the development of this new machine which you have referred to as Form 4?

A. There was a general discussion had with Mr. Behan in regard to the points which he would like to have covered in the development of the machine, and after that considerable thought was given a design which would embody those features, and then experimental work was done and drawings made, and finally a machine was evolved and made in the factory.

I can identify a memorandum which constitutes the first sheet of Defendant's Deposition Exhibit 9 in this case; that is a memorandum in my handwriting and dated September 30, 1920, and covers the principal points which Mr. Behan discussed with me at the time when this washer was proposed.

A memorandum which constitutes the second sheet of Defendant's Deposition Exhibit 9 is a memorandum in my
625 handwriting and dated 11/17/20. That has something to do with the development of the Form 4 machine. I am not too clear about the actual—I do not remember the instance of this memorandum being written, but it bears a notation here "To Greene," who was a draftsman in the employ of the company at that time, and I believe it to be a memorandum of the points which I took up with him in relation to this washer, this Form 4 washer. I do not remember that. That is my impression. I recognize the memorandum and recognize my handwriting, but I am not—I do not recall it at this time as being—well, I don't recall the occasion at which I made it.

I spoke of building models. The apparatus which has been marked Defendant's Deposition Exhibit 8 in this case, as that stands there now, was used to demonstrate an idea of Mr. Behan's for an overhead driven agitator, but the general construction of this machine was the same that was used for making the first model of the submerged agitator, which is the Form 4 machine. There were tests run on this model of the submerged agitator, Form 4 machine.

The two sheets of paper contained in Defendant's Deposition Exhibit 9, which bear the date February 8, 1921 and the title "Test of the Whirlpool Washer" are notes which I made. They are in my handwriting and concern the test of this washer with different kinds and amounts of loading. I put the date on those papers myself. I of course can-
626 not remember the actual date of the test, but it was my practice to be very careful in putting dates down, and I

therefore assume that the date was put down as of the date of the test. I will describe the water action which I observed in that test of the submerged agitator, Form 4 machine. When the tub of the machine is filled with water and the mechanism is started there is an outflow of water from the top surface of the agitator, then upward along the inner edge of the tub and back across the surface to the center and down at the center, and when there is nothing but water in the tub this action is quite vigorous, the water will break the surface, but as more and more clothes are added the action is slowed down to a point where if quite a large quantity of clothes are put in the turnover is almost negligible. That test report which I have identified, of February 8, 1921, uses the words "Whirlpool Washer" in the title. That referred to this same machine variously called Form 4 or submerged agitator. In this test we actually washed clothes of the different kinds and amounts that were shown on that notation there of the test. I observed the effect of the varying amounts of clothes of the action in the machine, very decided difference in the action, depending upon whether there was a small quantity or a large quantity. By that I mean, here is one
627 quantity which was only a pound and fourteen ounces, and in that the turnover was quite rapid, whereas in the instance where nine pounds and five ounces were used it was very slight.

I note on this test report the words "some tendency with white clothes to stay in center without much change in position." That refers to the same action that I mentioned a while ago, that if many clothes are present the clothes do not circulate freely in the tub. Naturally if there are many clothes the tub is well filled with clothes from top to bottom and there is no particular movement tending to turn them over in accordance with the action which occurs without that much quantity.

I cannot recall the discussion of this test with Mr. Behan, but I know that I must have, because that was the common practice. He was very much interested in the performance. I had discussions of this or similar tests with Mr. George L. Davis.

I am acquainted with Merrell Clark, Esquire. I had occasion to disclose to him this submerged agitator machine. The patent work for the Nineteen Hundred Corporation was carried on by a New York firm, Fish, Richardson & Neave, and Mr. Clark was the member of that firm who did our particular work. He would come to Binghamton usually and go over with us there anything which we had new which we might

be thinking of applying for a patent on. I disclosed the submerged agitator machine to him. That must have been along in the early part of 1921, I think, the early part of 1921.

628 I can identify a letter which forms a part of Defendant's Deposition Exhibit 9 in this case, dated March 23, 1921, and addressed to Messrs. Fish, Richardson & Neave, attention Mr. Merrell E. Clark. This is a letter which I wrote to Mr. Clark in relation to this machine. My signature is that at the foot of the third page of the letter. I can also identify a letter in Defendant's Deposition Exhibit 9 dated March 25, 1921; that is a letter which I wrote to Mr. Clark. It bears my signature. The first letter was written on March 23, 1921 and the second on March 25, 1921.

I find attached to the second of those two letters a blue-print. I am quite familiar with the blue-print, but I am not sure here—it is so indistinct—whether this is the sketch—I am not sure that it is the sketch number I referred to in the letter, but I believe it to be. I can identify the drawing which has been marked Defendant's Deposition Exhibit 9-A in this case; that is the sketch from which this blueprint was made and it is marked "Sketch 522," which is the one referred to in the letter. The legends on that drawing Exhibit 9-A and on that blueprint are in my handwriting. This drawing, Exhibit 9-A, represents the original model which was made of this Form 4 machine.

The purpose of writing these letters to Mr. Clark and sending the blueprint was to enable him to prepare a patent application covering the machine.

629 Defendant's Deposition Exhibit 5 in this case, a copy of the Doughty and Davis Patent No. 1,496,305 is the patent covering this machine. I am the same Herman W. Doughty who is named as one of the joint inventors of the patent. The other joint inventor named there is George L. Davis. I am acquainted with him. He was connected with the Nineteen Hundred Company at that time. He was superintendent of the factory.

After this test and disclosure to Mr. Merrell Clark, in general, production drawings were prepared and tools and fixtures made and everything necessary for putting the device into factory production. W. L. Greene and Vernon Wooster worked on the making of the drawings. There might have been some others. Mr. Greene's name was Will. I am not too sure of his middle initial.

I have examined the drawings which have been marked Defendant's Deposition Exhibit A in this case. Those are the

working drawings which were prepared at that time for putting the machine into production. They also carried certain changes which were made subsequently to the original preparation of the drawings. I find my initials on some of these drawings forming part of Defendant's Exhibit A. My initials are H. W. D.

An assembly drawing, forming part of Defendant's Deposition Exhibit A, is a drawing of the assembly of the submerged agitator or Form 4 machine. This drawing
630 does not bear any date, as far as I have seen, but I have reason to believe from its appearance that it was made at the same time when these drawings of the other parts of the machine were made.

A sheet of paper with some notes on it which has been marked Defendant's Exhibit 19 in the case of Maytag vs. Brooklyn Edison in the Eastern District Court of New York, Equity 6888, and also marked Defendant's Exhibit 19 in two cases in the Southern District of New York, Equity 75-202 and Equity 81-257, is the sheet from a personal notebook which I have, which I have kept for a number of years, and is the notation of various steps in the progress of this Form 4 machine.

(Paper marked Defendant's Deposition Exhibit 19).

I will explain the various steps in the progress of this work as I noted them in my notebook. I have a date of September 16, 1920, labeled "Start," and the title of this is "General Progress, Substitute for Agitator Electric Washer," that meaning Form 4 submerged agitator washer; I mean the substitute referred to was that. Then the next item is the date 4/19/20, and there must be an error in that date, because the memorandum is "Casting and Base from Master Pattern Received." It must be 1921 instead of 1920, because it follows the start. It could hardly have occurred before the thing was started. Then the next date, "August 10, 1921, First Machine Made from Master Patterns Returned from
631 about one week's use by customer for trial," and the next item "August 23, 1921; Trial with aluminum plate agitator and wooden vanes requires 240 watts". I think the Form 4 machine was put into production the latter part of 1921.

This machine here which has been marked Defendant's Deposition Exhibit 4 in this case is representative of our production of that model. Defendant's Deposition Exhibit 18, a photograph of a washing machine, is a photograph of the Form 4 machine.

I made family use of a Form 4 machine; I used it at my home for some little time. We used it to do our family washing and it did the job. It was not very fast, but it did a passable washing job.

I can describe the water action in that machine. When the machine has water only in it and is operated there is a flow of water from the top surface of the agitator up along the outer walls of the tub, back across the top and down at the center, and that action is reasonably violent, but as an increasing amount of clothes are put into that water the action slows down until with a quantity of clothes which pretty well fills the tub the turnover action is very slight.

I am familiar with the washing machine of the type illustrated in a circular which has been marked Defendant's Deposition Exhibit 12 in this case. The water action in this machine is very similar to that in the Form 4 machine
632 except that it is much more violent. They are practically the same as far as the course of the clothes is concerned.

There is rubbing of the clothes by the agitator in both of those two machines. I have had occasion to see agitators from the machines illustrated in Exhibit 12 which have been in use over a considerable period of time. They show evidence of wear on the eges of the vanes to a greater or less degree, depending upon the types of clothes they have been used with and the length of time that they have been used.

I cannot tell you exactly how many Form 4 machines were sold by the Nineteen Hundred Corporation, but something less than a thousand, over a period of about two years, probably. A book which has been marked Defendant's Deposition Exhibit 11 in this case is a book which was used to keep track of the serial numbers of machines and their date of shipment. The first pages relate to the Whirlpool machine, that is, it is labeled "Whirlpool," and the serial number of 1000 is the serial number which began the Form 4. On the bottom edge of the book is an abbreviation, "Agit. Elec. No. 4", and I would interpret that to mean the Form 4 machine. I can identify an original drawing entitled "Standard for Wringer;" that is a drawing of the standard for the wringer for the Form 4 machine. The drawing has my initials under "Approved." The date is May 16, 1921.

(Drawing marked Defendant's Deposition Exhibit AA).

I have examined the Form 4 machine, Exhibit 4, [now
633 Defendant's Exhibit 29] to determine whether the standard for the wringer on that machine corresponds

to this drawing, Defendant's Deposition Exhibit AA. It does correspond.

I can identify another drawing entitled "Drip Pan Casting." That is a drawing of what we later call gear case for this Form 4 machine. There is something on that drawing that I put on myself, my initials appear under the word "Approved." The date on that drawing is June 8, 1921.

(Drawing marked Defendant's Deposition Exhibit AAA).

I have compared the drawing Exhibit AAA with the Form 4 machine, Exhibit 4, to see whether the part on that machine corresponds to this drawing. It does correspond. The serial number on that machine Exhibit 4 is 1033.

Cross-Examination.

By Mr. Lane:

This catalog, Exhibit 10, bears the date of November 1, 1919. That is about the time I came with the company. I couldn't say exactly whether that book had been published when I came there. I was familiar with it, but I would not be able to say. It was just about that time, according to my best recollection. I believe that catalog showed the complete line of washers that were being manufactured by the Nineteen Hundred Company at that time. I never paid much attention to those old hand models, but the power models I was quite familiar with.

634 This first thing called the gravity washer, which appears on page 2, had a tub mounted on a vertical pivot at the bottom. The pivot was carried in a framework resting on the floor, and at the bottom of the pivot there were two arms one across from the other. The arms supported the pivot and the pivot supported the tub, and the end of the arms had sockets, and those sockets were supported by links reaching from the frame so that as the tub was oscillated back and forth by hand the swinging of the links would raise the tub and lower it, depending upon whether the links had reached the end of their stroke or not. Then in the upper part of the tub was an agitator attached to a rod, a stationary agitator, and the rod was capable of being locked at different heights in the tub. The clothes were placed in before the agitator was put in, the clothes and water, and then the agitator was set into position on top of the clothes and locked there at whatever elevation was necessary to reach the clothes, and then as the tub was oscillated the bottom of the tub with the clothes and water was raised up and the clothes rubbed against the under side of the agitator and on the bottom of the tub and on the sides of the tub. It is my recollection the tub had similar cleats

across the bottom of it to the one on the top board, but I am not quite sure. I feel pretty sure it did. That is, the cleats on the top board that rubbed were radially arranged from the center out. And if they were at the bottom they were
635 similarly arranged. So that the tub came up and compressed the clothes between the two rub-boards and they rubbed on both sides.

The one on the next page, page 3, didn't rise and fall. The tub was mounted on a pivot and had counterbalancing springs to bring it back to the central position, but it didn't rise and fall.

The action of the rubbing of the clothes was the same in the two except that you didn't have quite as much compression; there was no alternate compression and release, but there was one other feature, that that agitator was free to drop on top of the clothes. It was not held in a fixed position. It contacted the clothes in the operation because it dropped down on top of them.

I am not sure whether they had the same kind of construction in the bottom that they had on the other, but I believe that was so. Now, in the cut on page 4, the construction was somewhat different, but the operation was the same in this case. The rod on which the tub was pivoted or about which it rotated, I should say, came up through and afforded a support for the agitator which reached down and contacted the clothes. That is, it slid on this rod that went up through the fixed rod.

636 XQ118. In that case as in the others the top agitator or rub-board, as I have called it in my thinking of it, slid down, up and down, on the post?

A. Well, not in operation, but after it—you put it on and it went down as far as gravity pulled it and the clothes would allow it to go.

XQ119. So the clothes, the mass of clothes that was between the two rub-boards, was rubbed and scrubbed on both sides? A. Yes.

XQ120. Is that same thing true as far as the operation of washing is concerned on the standard electric shown on page 6, except that this was operated by electricity instead of by hand? A. Yes.

The next cut is supposed to show a picture of The Form 1 washer. That is on page 7. That is supposed to represent the structure which is in evidence here as Exhibit 2-A [now Defendant's Exhibit 27]. In the machine Exhibit 2-A, which is spoken of as the Form 1, the interiors of the tubs of those machines Form 1 were all corrugated, as far as I remember.

XQ124. Do you know what the purpose of that was?
A. Well, I suppose it was a sort of carrying out of the old idea of rubbing clothes.
637 XQ125. Like the old-fashioned washboard?
A. Yes.
XQ126. The same general idea would be carried out in the rubbers beneath in the earlier type of swing tub machines? A. Yes, I suppose so.

The interior of the tub was corrugated throughout in these earlier machines. That was quite the general practice as I knew it in washing machines of that type during that period.

In the Form 1 machine the agitator was slidably mounted through the cover, and the agitator and cover both had to be lifted to put water and clothes into the machine. After that was done, then, the cover and agitator were closed down into position, and when the machine was started the agitator would oscillate back and forth on top of the clothes. It was free to go down as far as it wanted to go, would go. In the actual operation well, it would go down until it contacted the clothes—the resistance of the clothes counteracted its tendency to go down—varying distances, depending upon the loading of the machine.

XQ131. So as the rub-board moved down it would contact and compress the clothes between the rub-board and the bottom and sides of the tub? A. Yes.
638 XQ132. And in that way got the rubbing action on the clothes both top and bottom and sides?
A. Yes.

If there were no clothes in that machine and you filled it up to the water line with water and started the machine in operation, the agitator would go down in the water. I don't know just how far, whether it would go to the bottom or not, but it would go down. That had a tendency to go down in the operation of the machine. In that way when the clothes were being washed it went down so that the clothes supported it in operation and prevented it from going farther. You got a rubbing contact there.

I would judge the agitator was about three-quarters of the diameter of the tub.

639 I will measure the diameters of the tub and agitator in that machine. I will measure the top first. The tub measures 21 inches, approximately, at the top inside. The agitator is 18¼ inches in diameter. That would be very much more than three-quarters. The comparative size would

be 18 to 21. The tub is 23 inches in diameter at the bottom on the inside.

XQ142. That is, the rub-board as it contacted the clothes at the top contacted substantially the area of the clothes of the inside of that machine, did it not, save for a little distance around the edge of two or three inches?

A. Well, approaching that, of course.

In all those Form 1 machines the sides of the cleats were rounded and the outer ends were not very much rounded, as I recall it. That machine is generally characteristic of the way they were generally made, although the effect of wear is evident over what the original cleats used to show.

640 The arrangement of cleats, the long ones and short ones, is not the same in that as the general construction that we put out; the cleats in the machines as made were radial. There were two longer cleats which were opposite one another, and the shorter cleats in between. Those are about the same length as the cleats that were used in the original machine, as nearly as I remember. The nails here are put in from the cleat side and then drawn into the surface of the cleats. The practice when they were made was to nail them from the back side so that nothing broke the surface of the cleat. The general shape of the cleats, as far as I remember, is very similar.

I don't believe I could give the speed of oscillation on that machine to you accurately. It is my recollection it was about 40 complete oscillations per minute.

XQ150. Now, in the use of that machine the housewife had to hold the shaft that supports the rub-board in the position it now stands, the upper position, before letting the cover down, didn't she?

A. Well, that is the accepted way. I am not sure now whether that would, if you allow it.

641 XQ151. Will you try it?

A. I am afraid to wreck this machine. Now it begins to go down (illustrating). Evidently it would not enter unless you held it back.

XQ152. Unless the housewife held it in position against the upper cover? A. Yes.

In order to open that cover the housewife would surely have to pull it up, in that case. The agitator would have to be pulled up first; up against the cover, or nearly so, in order to get it up at all.

XQ156. How far is it in the lower position of movement when you shut that cover down tight, if you can? I want to find the distance from the bottom of the lowermost part of the rub-board to the bottom of the tub.

A. It would be approximately an inch.

XQ157. So the rub-board was within about an inch of the bottom at its lowest limit of movement? A. Yes.

XQ158. So if you had only a very few clothes in the tub and water it would come down to that position?

A. I would expect it would. I am not sure how far it would go down.

XQ159. Supposing you only had three inches of water, say, in the tub, and clothes in the water; you would only have your agitator an inch or an inch and a half from the bottom in operation? A. Yes.

642 XQ160. Is that the way it worked? A. Yes.

XQ161. And the clothes would be between the bottom of the rub-board and the interior corrugations of the tub?

A. There is a little space there, of course, one inch. If you had more than that amount of clothes, why, certainly the agitator would rub the clothes.

I do not accurately know the weight of the agitator and the shaft on which it was mounted and slid up and down. It would be only a guess. My guess would be that it would weigh ten pounds.

In all the Form 1 machines like Exhibit 2-A all of the agitators were mounted in the same way; that is, they had that same range of movement up or down in sliding.

As to the time when they discontinued the manufacture of that type of machine, well, it must have been an overlapping time there from the time when the Form 4 began to be manufactured, when this machine still continued, but the demand dropped off rapidly from that time. I mean the demand for this Form 1.

643 It was approximately in 1921 or 1922, somewhere in that neighborhood.

As to why the demand dropped off, well, there were quite a good many objections to this machine. They were: its clumsiness; that is, you had to lift the agitator with the cover, and both of them were heavy, and then when they were up they were in danger of being tipped down. Well, I don't know as I can recall anything more.

XQ171. Was there any trouble with the clothes adhering to the rubbing cleats in that machine?

A. There was very poor circulation of clothes, practically none, when the machine was ordinarily loaded.

XQ172. Did the clothes adhere to the cleats?

A. Of course I couldn't say. It is impossible to see the action there. From my knowledge of other machines I would assume that they would adhere.

644 XQ173. I notice that you made some such comment in writing Mr. Clark, about the adhering of the clothes to the equally spaced agitator blades or vanes, and I wondered if that was the machine you were referring to. Was it?

A. Yes, that was the machine.

XQ174. Have you before you your letter of March 23rd? Will you look at that, Mr. Doughty, please? On the second page of that letter you say: "Another advantage results from the avoidance of an action which occurs in the top agitator machine which causes the agitator to sink in the water and restrict the free movement of the clothes." You were referring to this Exhibit 2-A machine, were you not, the Form 1 machine? A. Yes.

XQ175. You further say: "The reason for this objectionable action is this: The vanes on the agitator when in motion cause the water to flow from the center toward the side of the tub. Consequently, the center is lowered and the agitator, which is only held in position by floating upon the water, or by the supporting effect of the clothes, is drawn down with the result of compressing the clothes, restraining their free movement and increasing the power required to operate the washer."

You were referring to that 2-A machine?

A. Yes.

XQ176. The one you had in mind when you wrote to Mr. Clark? A. Yes.

645 XQ177. That is the action you described previously in answer to my question, that is, the agitator going down and compressing the clothes? A. Yes.

XQ178. In that letter further on you say:

"Previously such agitators have had vanes symmetrically arranged and radiating from the center."

You were referring to these 2-A machines, Form 1, were you not?

A. Well, that was the general arrangement, anyway. I don't remember whether I was referring to this machine or not.

XQ179. That was the general arrangement of all rubboard machines at that time?

A. Yes. These machines which were shown in the catalog that you have mentioned were arranged in that way.

XQ180. That is, all the machines made by Nineteen Hundred Corporation prior to that time? A. Yes.

XQ181. So you are referring generally to those as well as this Exhibit 2-A, Form 1, in the letter?

A. I assume so, yes.

XQ182. You say here:

"The purpose accomplished by this arrangement is to cause the clothes to be operated on in an irregular manner
646 and prevents them from remaining in a state of rest at the center of the tub."

Were you there distinguishing the Form 4 from the other machines of the Nineteen Hundred manufacture?

A. Yes.

XQ183. In the use of the unsymmetrically arranged vanes like those in Form 4 was there a more or less quiet zone in the washer created by the lack of the vanes?

A. Yes; the outflow at that point was less than the outflow at other points.

XQ184. So it made a less movement of water at the place that would be affected by those than at the other points?

A. Yes.

XQ185. That was stated by you to be one of the advantages which did away with this adhering of the clothes to the rub-board or agitator? A. Yes.

The machine that is shown on page 10 of the catalog, Exhibit 10, was of the same kind of construction interiorally and operated the same way as the ones on 3 and 4.

This is operated by water power instead of by electric power or hand power; hand power machines are 3 and 4.

The machine shown on page 11 of Exhibit 10 was like Form 1 except operated by water power.

XQ189. You have shown a sketch which you say was
647 made by Mr. Behan and dated 2/9/20, in which you state, or rather, which you stated is entitled or marked "Revolving Tilting Agitator"; is that correct?

A. Yes; the tilting portion of it, though, was not on the original sketch. That was added, according to the note at the bottom, a little later.

XQ190. Well, with that sketch that you have here, do you know what impression that conveyed to you as to how that was to work at the time it was shown to you by Mr. Behan, so far as the rub-board was concerned?

A. I am afraid I cannot remember about that.

Well, as I recall it, his idea was that he would, in addition to having an oscillating motion to the agitator, he would have a motion which—in which the agitator tilted and in the tilting position rotated around the axis at the same time.

I am not clear on that as to just how he had that mounted and whether they would compress the clothes or whether he had it higher up and not compressing them.

Well, if the tub were filled with clothes up to the point where the agitator did touch them, assuming that it is not free to go up and down, why, of course, the clothes would be compressed and on the low side would be in contact with the agitator.

The flopping up and down, as I recall this, was just
648 sort of a continuous motion in which one side was tilted lower, and that was superimposed upon the ordinary oscillating action.

I do not recall now whether he explained the reason for that at that time.

No machines were ever made by them using that construction, so far as I know.

There was never anything like that operation I have described.

XQ198. Do you know when they discontinued the manufacture and sale of the Form 4 machines, the Nineteen Hundred Company?

A. Well, I think it was either the latter part of 1922 or in 1923. It sort of dwindled out; no definite point there.

XQ199. Mr. Davis testified from the tally books before him—perhaps you would like to look at that if you would—that there were the following machines made in 1923; January, 12; February, 1; March, none; April, 1; May, none; June, none; July, 2; August, 3; September, 3; October, 7; and November, 2; making a total of 31 made during that year. Will you glance it through and see if that is practically correct?

XQ200. If it will make it easier for you, I am talking about the total number made and sold during 1923 as shown by that book, of the Form 4 machines?

649 A. Well, they are mixed in a little bit. Evidently the serial numbers weren't shipped in order during that time entirely.

XQ201. It shows the dates, doesn't it? A. Yes.

XQ202. Just take the dates, as nearly as you can count. I got 31, according to Mr. Davis's count.

A. I find 37 which are dated in 1923 here.

XQ203. Mr. Davis also testified that there were 73 made during October, November and December of 1922. Will you check that and see if you can find that?

A. This is 1922, isn't it, October, November and December (indicating)?

XQ203. Yes.

A. I see they are mixed in. I find 103 that were dated as being sold in those three months.

XQ204. Then, if you have your figures correct, there were 140 machines sold after September, 1922 of the Form 4 type, taking the 37 you gave me before and the 103 you have just given me.

A. I didn't remember that first figure. I didn't try to remember it. Whatever those two items amount to would be the total.

XQ205. So except for the 140 machines, assuming that that total is correct, which it is, substantially all of these 700 machines which Mr. Quinn testified to were sold of the 650 Form 4 type were substantially made and sold in the first nine months of 1922? That is correct, isn't it?

A. I would think so.

XQ206. Do you know why they discontinued the manufacture of that machine so soon a time after they started its manufacture?

A. Well, I do not think it fully met the expectations. The agitation was not as violent as some members of the organization thought it ought to be. It was a larger machine, and I had better say if it had been smaller it would have been more acceptable. Farther than that I do not recall.

XQ207. Now referring to your notes on your test on February 8, 1921, you say there:

"It is something to be determined whether or not half the quantity run half the time would not give better satisfaction."

You had not determined that at that time, had you?

A. Well, my belief is—what I meant by that was that a definite test to that effect would demonstrate. My feeling was, as the following paragraph shows—my feeling was that the action was much better with a smaller quantity.

XQ208. At that time the company advocated washing as many clothes as could be put into the machine comfortably

and advertised that it had a large capacity of washing
651 at a single time, isn't that true?

A. It would be all true with the exception of the advertising. I don't recall what was advertised, but it was the general tendency at that time to stress the large quantity of clothes which could be handled.

That was one reason for my testing the machine with a load of 9 pounds and 5 ounces. I don't believe I can answer accurately whether I washed that way when I was washing at home.

XQ211. Now, you state that the tendency of the clothes, or rather, that there was some tendency of the white clothes to stay in the center without much change in its position. That is what you referred to, that when you had a load of clothes in such as advocated you had very little change in position in the actual tub? A. Yes.

These drawings have a number of dates that run up, some of them, as late as until June of 1922.

That had to do with minor changes in the construction from time to time as the machine progressed.

XQ214. Do you know whether any of the machines followed the latest of the drawings or utilized any of the things shown in the latest of the drawings of Form 4?

652 A. I couldn't say definitely, but that was the practice, that drawings weren't changed unless it was intended to change the construction of the parts.

XQ215. While this Form 4 shows the general scheme of construction—it was one of the early machines, I believe, in January, 1922 that we have here as Exhibit 4—the construction may have changed to conform to the drawings later, but in minor particulars? A. Yes.

XQ216. That is what you said? A. Yes.

On one of these here in the notes that I made I say, "The start was 9/16/20."

It is my belief that that meant the time that Mr. Behan started me on that work generally; just the start of the work.

The first machine that corresponds to the Exhibit 4 [now Defendant's Exhibit 29] was shipped October 8, 1921, as nearly as I can tell from that book. That seems to be the earliest date.

I am connected with the Binghamton Washing Machine Corporation at the present time.

They are getting ready to manufacture now; they have started to some extent.

XQ223. How does the machine compare in general with the one shown on this Exhibit 12, so far as operation is
653 concerned?

A. It is of the same principle.

In the machine shown in Exhibit 12, I think the tub is 21⅞ inches in diameter and I think the impeller is approximately 12½ inches.

XQ225. Why do you leave so much space in the machine between the edge of the impeller, the circulator edge, and in the interior of the tub?

A. Well, it is demonstrated that you get plenty of agitation with an agitator of that size. A larger agitator would be more expensive.

As I recall the impeller blades, they are roughly about two and a half inches high at the outer edge.

They become higher, but the area decreases ordinarily as they go in. I mean that the vertical height of the blade increases from the outside to the center, but its actual height as measured from the top of the blade to the top of the cone which constitutes the body of the agitator is less. In other words, the cone rises faster than the vanes rise; the bottom rises faster than the top.

As to the purpose of the cone in that type of machine, there would be a zone of quite quiet water if you try to go up abruptly from a flat surface to a straight column, and
654 the cone eases the change in direction of the water and of the flow at that point. I think it assists in getting a better operation.

The speed of oscillation on this Exhibit 12 machine shown on the card was very close to 60 oscillations per minute, that is, double oscillations. It is possible to have somewhat different speed and still get satisfactory results, but there seems to be a relation between the speed and the arc of travel and the area of the blades which produces the best results. I do not believe that that is a definite point, but in general.

We arrived at the best relation of the spacing of the impeller, the size of blades, and the conical surface, by tests before we put that machine on the market; we tried a great many shapes and sizes. We found that this particular shape was the best one that we could get for obtaining the results that we desired to obtain in washing clothes with that machine.

In the machine shown in Exhibit 12, with water only in the tub, when the machine is put in operation the current of water flows from the center outwardly along the vanes of the agitator, striking the sides of the tub, coming up alongside, coming back at the top, and going down at the center, and that motion in general is kept up, although the agitator, of course, by going in two directions, changes it to some
655 extent.

There must be some cross currents.

XQ237. Now, in that motion you sought to get the most violent action of water you could in the tub, did you not?

A. Why, yes. I think that is a fair statement.

XQ238. You oscillated at that speed so as to get as violent an action as you could, so as to get as heavy a load of clothes in the water as possible, and so as to get the water acting on them as fully as possible?

A. I do not think I would say you wanted to get the most violent action of the water. You want to get the most volume traveling in the direction that you would like to have it go, rather than breaking it into spray, which you might do if you increased the speed decidedly.

XQ239. What you were trying to do was to get the most violent flow that you could in getting the best washing results? That is the point you make? A. Yes.

XQ240. You tried to keep, in that operation, the clothes spread out as much as you could, so that they flexed in the water and they became accessible to the violently flowing currents? Is that the idea?

A. My thought is that the object of the action should be to allow the clothes to turn over freely so that they get as much motion imparted to them as possible.

XQ241. Of the action of the water itself as it flows
656 around in the violent flow?

A. I do not draw a distinction between whether it is the action of the water or it is the action of the agitator. My thought is anything which causes them to flex upon each other assists in the washing action.

I do not know accurately the extent to which this type of machine shown in Exhibit 12 was sold by the Nineteen Hundred Company while I was with them or subsequently, but very many thousands.

XQ243. Hundreds of thousands probably?

A. I would think that would be safe.

They are manufacturing them at present.

I don't believe I could say how long a series of experimentation we carried on while getting this machine shown in Exhibit 12 ready for the market, but there were a lot of experiments carried on. I carried those on myself. I tested the machines often. I tested the machines in operation and watched the movement of the water and the clothes in the tub.

657 Somebody worked with me in that work; we had an experimental department, and the members of that department would assist. Mr. Davis sometimes was around.

I don't know what was done with that first machine that was shipped out to Mr. Holmes, after he got it.

XQ252. Do you recall the height of the rubbers or cleats in the Form 1 machine?

A. Well, it was slightly—I think it was slightly under 7/8ths of an inch, made from stock lumber.

XQ253. Was the same true of the Form 4?

A. Well, approximately.

XQ254. You made some reference to the wear on machines like Exhibit 12. You said you thought it might be due to the condition of the clothes whether more wear was shown. Do you know whether, if there were no clothes in the machine but you had sand or other material placed in there, you would get similar wear?

A. I would expect so. Are you asking if sand were present?

XQ255. Yes. A. Yes, I would assume so.

XQ256. You would get more wear than if no sand were in the machine? A. Yes.

658 XQ257. Because of the friction that is created by the rapidly moving paths through the water with sand in it? A. Yes.

XQ258. So there is no way of determining whether it was the material in the machines or the clothes that caused the wear on those that you saw worn, is there?

A. Well, I never attributed the wear to the presence of sand in particular. I assume that dirt present in the clothes had some effect on that.

XQ259. That might be the cause of it and it might not?

A. I assume that ordinary washing will produce some wear. Of course sand will produce more wear; there is no question about that.

I have seen machines with vanes brought right to an edge. I would say that is unusual. I couldn't say that I had seen very many brought to an edge, truly, but I have seen evi-

dence of wear in a large number. When I say "large number," of course machines used to come back to the factory for repairs, and those machines probably didn't constitute a large proportion of the output by any means, but of those machines which did come back I would say that a majority of those machines would show evidence of wear, some wear, but nothing like the sharp edge that I spoke of, that would be a very unusual occurrence.

659 My impression is from instances of the kind that I have seen that strong washing solutions attack the metal uniformly or approximately uniformly throughout, and while in such solutions you would get a quicker wearing away, I do not believe that that is primarily due to the solution, because that action occurs on the under side of agitators as well as on the upper side; I mean the corrosion due to strong washing solutions.

I never tried to operate one of these washing machines simply with the water and observe the wear that takes place in the plain water.

Ordinarily any experiments I have taken to determine water action would not be carried on to determine the wear on the agitator.

XQ270. So you don't know whether it would show wear or not simply by running water, hard water or otherwise, as to wear?

A. I could not definitely separate that action from the ordinary washing action at all.

Redirect Examination.

By Mr. Bristol:

This wear on the agitator of the multi-vane machine as shown in Defendant's Exhibit 12 occurs principally at the outer end of the vanes of the agitator.

RDQ272. Would you characterize that as abrasive wear or chemical erosion or something else?

660 Mr. Lane: Objected to as calling for the opinion of the witness.

A. You do get chemical corrosion from washing solutions, because aluminum is more or less subject to it, but to me I do not think that the wear is due to that fact; I think that assists it, but that in general that chemical action is approximately uniform throughout, even on the under side of the agitators.

RDQ273. Then, to what do you ascribe the wear that you have observed on these agitators?

A. I have ascribed it to the friction produced between the agitator blades and the clothes.

The nominal rating of the motors on the machines such as are illustrated in Exhibit 12 is one-quarter horse power. Of course they are able to give twice that.

The wattage they draw depends upon the load.

RDQ276. What is the effect in these multi-vane machines as, first, a few, and then more and more clothes are loaded into the machines?

A. The turnover of the clothes is lessened as more clothes are put in.

RDQ277. How does that compare with the effect in the Form 4 machine such as Exhibit 4?

A. The same thing to a less degree.

As you load more clothes into the multi-vane machine the wattage drawn by the motor increases.

661 I would assume that part of that effect is due to the rubbing contact between the agitator and the clothes.

The water capacity of the multi-vane machine as shown on Defendant's Exhibit 12 is, I think, about 16 gallons. The water capacity of the Form 4 machine, Exhibit 4 is around 24 or 25 gallons.

I have made measurements on the Form 3 machine, Exhibit 103 [now Defendant's Exhibit 20], and I find the agitator is just slightly under 17½ inches in diameter. The diameter of the inside of the tub is slightly under 24½ inches. The diameter is approximately the same at the bottom of the tub; it is slightly greater; the bottom of the tub is 24¾ inches in diameter.

This tub in Exhibit 103 [now Defendant's Exhibit 20] is smooth on the sides and has eight ribs in the bottom. The ribs in the bottom are approximately 3/16ths of an inch high.

I am familiar with the Davis Patent No. 1,240,826, of which a copy has been marked Defendant's Deposition Exhibit 3 in this case.

RDQ289. How do the Form 1, 2 and 3 machines com-
662 pare with the machine disclosed in that patent?

A. Of course this machine shows no mechanism, no operating mechanism, but the agitator and the tub are ap-

proximately the same, except I see no ribs shown in the inside of the tub here.

RDQ290. Are you familiar with the description of that patent as to the water action that takes place?

A. It is some time since I have read it.

RDQ291. Will you just glance through it, please, and refamiliarize yourself with it and then tell us whether the description there represents the water action as it took place in the Form 1, 2 and 3 machines?

A. The description of the circulation found here in the body of the specifications describes a circulation outwardly under the agitator, downwardly within the tub walls, and thence upwardly through the fabrics in the tub and to the center of the space below the agitator. I do not believe that the machine in actual practice would create those currents except when the agitator was held up from descending, or I might say it might create those currents at the instant that the agitator, or while the agitator was at the surface of the water, but the moment it settled down into the clothes I think those currents would disappear.

RDQ292. When the tub was filled with water in the
663 Form 1 machine and the machinery was stationary would the agitator float or sink?

A. It would float, I would say, when the machine is new. When a machine was old and the agitator water-soaked, it would go down even without any effort to force it down.

RDQ293. As you built it did you intend it to float or sink—as the Nineteen Hundred Company built it?

A. Well, as I have stated, I didn't have anything to do with the design of that machine.

Recross Examination.

By Mr. Lane:

RXQ294. In that Form 3 machine, that is, Exhibit 103, you had the rub-board or whatever you call it slidably mounted just the same as in the Form 1? A. Yes.

RXQ295. It was intended to be operated in the same way as Form 1, wasn't it? A. Yes.

RXQ296. So what you said about the operation of Form 1 would apply with equal force to Form 3?

A. Well, as far as I could recall it would, yes.

RXQ297. Will you look at the number of cleats in the Davis patent and compare them with the number of cleats on Form 1 machine here and state what the difference in number is?

A. On the Davis patent there are eight; on this machine here there are twelve.

RXQ298. The picture of the Davis patent shows substantially the same position of the agitator or the rub-board when the cover is down as it does in the Form 1 machine, doesn't it, substantially?

664

A. Of course the agitator is shown here at the bottom of the tub in the drawing. Is that what you mean?

RXQ299. Yes. In the other one it is just an inch above, about? A. Yes; with the tub empty; yes.

Redirect Examination.

By Mr. Bristol:

RDQ300. Did you ever hear of anybody washing with three inches of water in a Form 1 machine?

A. No, I never did.

RDQ301. So when Mr. Lane assumed three inches of water in a Form 1 machine in one of his questions to you, he was assuming something that, as far as you knew, did not occur in actual operation?

A. I never knew of its being used in such a small quantity.

Recross Examination.

By Mr. Lane:

RXQ302. It would wash the same way whether you had three inches of water or ten, wouldn't it?

A. Well, of course you have got to consider the amount of clothes in, in each case.

RXQ303. That is what I mean.

A. And it would be the relation of clothes to water in each case. I think to that extent they would be the same.

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665 THOMAS W. BEHAN, a witness for the defendant. Testimony taken by deposition at New York, October 26, 27, 1937.

Direct Examination.

By Mr. Bristol:

My name is Thomas W. Behan, my residence 66 Riverside Drive, Binghamton, New York, and I am a manufacturer. I am now connected with Binghamton Washing Machine Corporation. I hold a public office at the present time; the office is Mayor of the City of Binghamton, New York.

In 1934, I resided in Binghamton. I didn't have any business connection at that time.

I am the same Thomas W. Behan who in January, 1934, gave a deposition for use in connection with the case of The Maytag Company vs. The Brooklyn Edison Company.

I have no connection now with either The Maytag Company or the General Electric Supply Corporation, nor any financial or other interest in the outcome of the present suit.

I was connected with the Nineteen Hundred Corporation from the fall of 1918 until about the first of the year 1934, the very last of 1933 in capacities from factory manager to general manager and president.

I identify a washing machine which has been marked in this case as Defendant's Exhibit 2-A [now Defendant's Exhibit 27] as having relation to The Nineteen Hundred Corporation; it was manufactured by it.

666 It is representative of machines that were manufactured in substantial quantities over a period of, I should say, from possibly 1917, 1916 until 1921, or 1922.

I can identify a washing machine which has been marked as Defendant's Exhibit 103 [now Defendant's Exhibit 20] in this case as having relation to The Nineteen Hundred Corporation; it was manufactured by The Nineteen Hundred Corporation and is representative of the Form 3 washer.

The machine in the photograph marked Exhibit 10 was manufactured by The Nineteen Hundred Corporation; it is representative of the Form 3 washer.

The catalogue marked Defendant's Exhibit 10 in this case was published by The Nineteen Hundred Corporation.

I am familiar with the Davis patent 1,240,826. That patent was owned by The Nineteen Hundred Corporation. I know the George L. Davis named as patentee. He was superintendent of The Nineteen Hundred plant.

Machines such as are illustrated in Exhibit 2-A [now Defendant's Exhibit 27], Exhibit 103 [now Defendant's Exhibit 20], and the Form 2 machine represented the second class of machine. I mean by that the cheaper class of
667 machines manufactured by The Nineteen Hundred, the better class or priced machines being the so-called Cataract or oscillating machines. They were superseded by single and multi-vane agitator machines.

The machine in the photograph marked Exhibit 18 was produced and manufactured by The Nineteen Hundred and known as Form 4 Whirlpool or agitator type. That was produced in 1921.

That machine before me marked Exhibit No. 4 [now Defendant's Exhibit 29] identifies a Form 4 agitator type machine produced by The Nineteen Hundred Corporation.

I can identify a paper which has been marked Defendant's Exhibit 7. It is a sketch that was made by myself 2/9/20 in an attempt to develop a washing machine or improve the line of washing machines that we had in production at that time.

Q32. What handwriting is on that sketch?
A. There are two handwritings on that sketch. My handwriting is on it; also Mr. Herman W. Doughty's.

That is the same Mr. Doughty who testified here a little while ago this afternoon. He was an engineer for the company. I had conferences with Mr. Doughty about this sketch, prior to the date 2/9/20.

Q37. Will you look at a file of papers which has [—]
668 marked Defendant's Exhibit 9 in this case and refer particularly to copies of letters to W. Lee Holmes in that file. Can you identify either the copies of the letters or the subject matter?
A. These letters were written by Mr. Barker, who was at that time our sales manager. I can't say that I have ever seen these letters before—I can't say whether I did or did not.

I know the Mr. Holmes to whom they are addressed. He was the representative of The Nineteen Hundred Corporation on the western coast.

Q39. Do you know whether the Nineteen Hundred Company shipped any of the Form 4 washers to him?
A. I do.

Getting back to the development of the Form 4, tests were made of models before it was determined to go ahead on production. I discussed some of them with Mr. Doughty and others, all interested parties.

Q42. Were you familiar with any test such as is reported in the tests of the Whirlpool washer at that time, February 8, 1921, in this Defendant's Exhibit 9?
A. I was familiar with all of the development. I was most intimately familiar with the development step by step as it went through the plant.

669 I'm acquainted with Mr. Merrell E. Clark. I have known him for, oh, eighteen years. He is connected with Fish, Richardson & Neave in New York City. He was in charge of our patent work at Nineteen Hundred.

In connection with the Form 4 machine I had Mr. Clark do something in the way of patent applications or disclosures. As was customary in any new development or production I

had Mr. Clark visit Binghamton, look over the production or the development, and had a conference with all who were interested or had anything to do with it. Mr. Doughty was present at that conference. As I recall it, that conference took place in the spring or early part of February, 1921.

Q51. Will you refer, please, to a letter dated March 23, 1921, on The Nineteen Hundred Washer Company's letterhead and addressed to Fish, Richardson & Neave, attention of Merrell E. Clark, and tell me whether you can identify that in any way?

A. I don't know that I can identify this particular letter other than it is a letter written by Mr. Doughty, that is, the engineer, but I remember discussing the contents of the letter with Mr. Doughty and Mr. Clark, and as I recall it, suggesting to Mr. Doughty that he write Mr. Clark this letter.

Q52. You recognize the paper as the regular letterhead of the company at that time?

A. I do.

670 Q53. And the same question with regard to the letter dated March 25th to Fish, Richardson & Neave, attention of Merrell E. Clark?

A. I don't know as I recall that letter. It was almost in the natural order of things that it went.

Q54. Will you look at the blueprint attached to that letter of March 25, 1921, and also at the drawing marked Defendant's Exhibit 9-A in this case and tell me whether you can identify the subject matter of the blueprint or the drawing.

A. I can't make out this figure here (indicating blueprint). I identify this as representing some of the initial work in the design of the Form 4 machine.

Q55. Does that represent a model that had actually been constructed at that date?

A. I think it does.

I can identify the two invoices marked Defendant's Exhibits 13 and 14 in this case as forms of The Nineteen Hundred Company. I do have independent recollection of the shipment of Form 4 machines to Holmes, some time in the latter part of the year 1921. I have independent recollection of the shipment of Form 4 machines to Osgood of Syracuse. Osgood was a dealer handling the Nineteen Hundred line of machines in Syracuse territory. I identify the book which has been marked Defendant's Exhibit 11 in this case as the type of book we kept our records in, shipping records. I

671 wouldn't know whether that fact has any relation to the Form 4 machine. I assume that it has. The nomenclature states that.

The machine Exhibit 4 (now Defendant's Exhibit 29) in this room, is in a general way representative of machines sold by The Nineteen Hundred Corporation, I should say less than 800 of such machines were sold.

In the Form 4 machine the water was thrown out by centrifugal force toward the sides of the tub, up the sides of the tub, and then down back to the center. I observed the Form 4 machine in operation. As clothes were put into the washer while it was in operation, as the load of clothes was increased the action was diminished.

Q70. Did you observe what happened when one piece was put into the washer?

A. Why, generally I did observe, colored pieces and so forth; it generally followed the circuit of the water.

I am familiar with Defendant's Deposition Exhibit 5, copy of patent 1,496,305 to Doughty and Davis. That was a patent owned by The Nineteen Hundred Corporation. It was a design that was worked out by the inventors and secured through the Patent Office by Mr. Clark. That is the same Merrell E. Clark that I have been referring to.

Cross-Examination.

By Mr. Lane:

672 At the time I entered the employ of The Nineteen Hundred Corporation hand machines and power operated machines were being sold by it. Hand machines were several different models with slight variations. Generally speaking the hand machines, most of them manufactured, were the tub oscillating type.

Exhibit 10 shows the complete line being manufactured by the Nineteen Hundred Company when I first went there or shortly thereafter.

Page 2 of that catalogue is a hand operated machine and it had an agitator—we called it an agitator in contradistinction at that time to the peg type and other machines on the market — with slats on the bottom, and there were also slats on the bottom of the tub. The tub was arranged so that it moved vertically up and down by forms or mechanical links. The upper part or agitator—the upper slats on the bottom of the agitator were fastened, and there was a handle by which it was rotated backward and forward, and springs to take up the backlash and restore the machine. You kept on working that until you were satisfied that the washing was done. The intent by raising it up and down was to more or less simulate what a woman does, souse the clothes up and down through the water, and to rub them at the same time. The purpose of

that toggle arrangement was to compress the clothes, squ
them, between the rub-boards at the bottom and the top of
tub.

At one time I worked with the General Electric Comp
That was several years before I was with The N
673 teen Hundred. In fact, I never worked only with
two companies in my life. I don't know what y
those were. Maybe 1900 to 1918, somewhere along there. I
ing that time, I worked in the drafting room in the engin
ing department, I did something in the construction dep
ment, in the field, and became placed in charge of the f
tional horsepower motor division, that is, the small mo
that are used on washing machines and other appliance
am not familiar with the General Electric Supply Comp
I know there is such a company but I don't know the organ
tion. I don't know whether it sells the products of the G
eral Electric Company or not.

XQ91. Do you know when the General Electric Comp
first started the manufacture and sale of washing machi
of the gyrator type?

A. Why, they have been manufacturing them three
four years, I should say; maybe five years at the outs

During the time that I was conected with the General E
tric Company I had occasion to examine and see the vari
kinds of washing machines that were being made by diffe
manufacturers of washing machines in this country.
General Electric Company at that time supplied g
674 numbers of motors for the washing machines made
different manufacturers of washing machines. In
working capacity for the General Electric Company, I
occasion to examine the various types of washing machi
that were then on the market. The General Electric C
pany sold large quantities of motors to The Maytag C
pany during the time I was connected with them. They
sold them to several other manufacturers of washing
chines throughout the country. They sold some to Ninet
Hundred.

The machine shown in a sketch which has been marked
hibit 7, never came to anything as far as manufacture is
cerned. We never made anything like it. The motive tha
had in mind when I was making that construction, so fa
the rub-board or agitator device was concerned, would
more or less conjectural now. The idea, I think, embodied
principle of washing the clothes with the agitator or sc
board or whatever you call it, coupled with the thought
as it oscillated back and forth the agitator took a pecu

motion squeezing the clothes and releasing them on one side and squeezing them on the other, as it traveled around back and forth.

XQ103. That is, you would get somewhat the action of the vacuum cup machine at the same time with the oscillating.

675 A. On general principles.

XQ104. Squeezing as well as rubbing?

A. I think on that general principle.

XQ105. That suggestion was not followed by any manufacturer of machines, by your company or anyone else that you know of?

A. Not that I know of.

I would not want to say how many machines of the Form 1 type the Nineteen Hundred Company sold before it abandoned the manufacture. It is a matter of record. The records are in the Nineteen Hundred plant. Maybe at the highest peak we made 5,000 a year. However, that is a matter of record. All of the Form 1 machines were substantially identical with the one that is here in evidence as Exhibit 2-A [now Defendant's Exhibit 27] as far as the construction and the arrangement of the tub and all that are concerned. Well, there were slight changes going on all the time, but I would say they all had corrugated interior tubs, as far as I recall it. They all had corrugations in the tub around the entire interior.

XQ111. Were the rub-boards mounted in substantially the same way as in the machine 2-A?

A. Of course, we call them agitators.

XQ112. But they did serve the function of rubbing, didn't they?

A. Yes, they did.

676 XQ113. They were substantially identical, so far as construction and operation are concerned, with what is known quite generally throughout the trade as the rub-board type of machine? A. Yes.

XQ114. Whatever you call it, it was substantially like what is generally called the rub-board type? That is correct, isn't it? A. I think that is so.

XQ115. You had a special name for it in your branch? You called it the agitator instead of the rub-board?

A. I should say they were all the same species.

XQ116. Do you recall the speed of oscillation of that rub-board in that machine?

A. If my memory serves me it was 40 complete revolutions per minute.

XQ117. Were all those rub-boards mounted on a shaft which slid vertically up and down in the tub? A. Yes.

XQ118. Did the rub-boards come to substantially the same distance, about an inch from the bottom, when the cover was closed, as in that machine?

A. Yes; they had to. They were made to the same specifications.

XQ119. In that machine it was necessary to pull the rub-board up against the cover in order to open it at all,
677 wasn't it? A. Yes.

XQ120. It was also necessary to hold the rub-board while closing the cover in order to get it into the tub, wasn't it? A. Yes.

XQ121. Now, can you describe the operation of that rub-board or agitator, whatever you call it, when the machine was properly filled with clothes and water, so far as the action of the rub-board is concerned?

A. Why, when the tub was filled as per manufacturer's specifications, we expected there would be water above the surface of the clothes, and as the agitator or scrub-board was lowered and the motor turned on, the agitator threw the water out to the sides of the tub and then it went down through and up again. That allowed the agitator to lower itself. As the water came up part of it climbed on top or got on top of the agitator and helped to submerge it into the clothes, and in its washing action there was a relatively small amount of water motion and considerable rubbing.

XQ122. The rubbing was dependent upon the way the agitator worked going down onto the clothes?

A. The inclination was for the agitator to go down on the clothes.

XQ123. And engage the clothes and rub them and press them against the side of the tub as well as on the agi-
678 tator itself? A. That is true.

XQ124. That is what was depended upon in that machine for washing the clothes?

A. That was the action for washing, yes.

XQ125. None of the machines made like the Form 1 type had the agitator or rub-board, as I call it, held in fixed position relative to the cover, did they? A. No.

XQ125½. That same thing is true of Form 3, isn't it?

A. Yes.

XQ126. They all slid up and down the same way relative to the cover? A. That is right.

I was familiar with the various types of washing machines from 1906, in a general way. I couldn't tell you them all, but at one time there was a tremendous amount in the field, but

the outstanding ones, I would say, were hand washers at that time—most of them were hand washers—were the — Dietz made a lot, Haag made some, and several were made up in Iowa, in different parts of the country, some made by the Jamestown people. I don't recall. In the washing machine industry, at the time I went to work for the Nineteen Hundred Company, the types that were most generally known were those that are known as the rocker scrubber type, dolly type; the oscillating type, and the cylinder type and the vacuum cup type. Those were distinctive types. Of
679 the rocker scrubber type, some of the earliest types that I remember — one of the earliest types that I remember that impressed me the most was the Dietz type. That was more or less, if you can draw this simile, like two washboards and you could put them in soap and water and you could move them relatively this way (indicating) with the clothes in between. They had that in a curved shape. The other types of washing machines were made with slats on an agitator or scrub-board as you call them. Some manufacturers like Haag, I think, called them scrub-boards. Nineteen Hundred called them agitators. A predominating type was the peg type. Some called them the dolly type.

Last night I was telling about the various types of washing machines previous to 1922 and I was speaking of the scrub-board type. A cut of a machine, to which you call my attention, represents the type which I described. It represents the type that I have known as a scrub-board type of Dietz.

The cut that you hand me represents the type of machine I know as the dolly type.

XQ137. Wasn't that machine the most largely sold of any that was on the market previous to 1922?

A. Well, it was a very large seller in the machines. I would say yes.

Another cut, to which you call my attention, represents the type of machine known as an oscillator washer. I be-
680 lieve I did refer to it in my testimony. Another picture of a machine to which you call my attention is the type known in the trade as a cylinder washer. The cut, No. 6, is known to the trade as the vacuum cup type.

XQ142. These cuts are fairly illustrative of the different types of machines that were on sale previous to 1922 generally are they not—the rocker-scrubber type, the peg dolly

type, the rub-board type, the oscillator, cylinder and the vacuum cup?

A. The pictures I just observed represent these general types, yes.

(Six cuts marked Plaintiff's Cross Exhibit 2-1 to 2-6 inclusive, respectively.) [Received in evidence as Plaintiff's Exhibits 18-1 to 18-6, inclusive.]

Two illustrations which you show me in this catalogue, Exhibit 10, represent the true design of the swinging tub type machine.

(Illustrations marked Plaintiff's Exhibit 3-1 and 3-2). [Received in evidence as Plaintiff's Exhibits 19-2 and 19-3.]

I was familiar with the Maytag gyrator type of machine when it first came on the market in 1922. The machine shown in Snyder patent 1,866,779 dated July 12, 1932, represents the type of Maytag machine that I first observed. I can't state the date. Some time about 1922, when I first saw it. I can't say the exact date I saw it. I saw it very shortly after it first came onto the market.

681 XQ149. When that machine first came upon the market the Nineteen Hundred Company and various other companies were selling machines of the prior type such as the peg dolly, the rub-board, oscillator cylinder and vacuum cup, were they not?

A. You asked were they selling those general types?

XQ150. Yes, generally. A. Yes.

XQ151. That was the only type they were selling when the Maytag type machine came onto the market that you were familiar with?

Mr. Bristol: Who?

Mr. Lane: The manufacturers generally of washing machines.

A. Well, they were selling the types which they had advertised and were carrying on commercially.

XQ152. Those were the only types that they were advertising at that time, weren't they?

A. As far as I know.

XQ153. When that machine first came upon the market and during the first two or three years of its being sold by The Maytag Company, do you know what if any criticisms were made of the machine by competitors with which you were in contact?

682 A. Well, it was regarded by—

A. (Continuing) It was regarded by our company as being harsh on the clothes in its operation.

XQ154. What representations were made in connection with the sale of your machines in competition with the sale of those of the Maytag Company at that time?

A. Well, it is pretty hard to restrain salesmen from excessive statements.

A. (Continuing) Well, I did believe personally it was hard on the clothes—I still do—when loaded to the extent that we were loading machines at that time.

XQ155. Was it the practice to load Maytag machines with an extremely heavy load of clothes to demonstrate that fact by the competitors?

683 A. I didn't carry on such a test. In competition our salesmen did load clothes heavily in a Maytag machine.

XQ156. For the purpose of what?

A. Well, in order to, by relative test, show the advantage of the machine which we had to sell.

XQ157. Don't you personally know what was said generally by competitors selling these old type machines when the Maytag was first put upon the market, during the first two or three years of the sales?

A. Outside of my own company all I know is what our competitors told me.

XQ158. During that period of time manufacturers generally advocated the sale of their old type machines and condemned the Maytag gyrator type machines, did they not?

A. Our efforts were to sell the machines which we had in production and we used our claims as offsetting the Maytag claims wherever possible to our advantage.

XQ159. Are any manufacturers with which you are
684 familiar at the present time selling in any quantities any of the old type machines that you refer to?

A. In my opinion they are not.

Mr. Bristol: That is your opinion, Mr. Behan?

The Witness: Yes, sir.

XQ160. You base that on very close contact with the various manufacturers in the country?

A. I am in close contact.

XQ161. And you know generally what they are all doing?

A. Yes.

When the Nineteen Hundred Company first put on the market the three-vane gyrator type machine like that in Defendant's Exhibit 12 is a matter of record in the factory. I wouldn't be able to say what year. Oh, I should say in '25,

'26 or '27. I can't say definitely. I mean starting with the years 1925, 1926 or 1927. I would not be able to say definitely, but it is a matter of record in the plant. They have been selling those machines of that type ever since. That is their principal production at the present time, and has been since whenever they started it.

XQ169. During the period up to and including 1922 and before the Maytag machine had been extensively sold,
685 wasn't it the general practice of your co-manufacturers generally to advocate the use of as large loads of clothes as could be put into a washing machine for a given operation?

A. It is our practice to advocate as large loads as possible to meet the commercial requirements.

XQ170. And the advocacy, the advertising and otherwise, was for as large a clothes capacity as possible in the early type machines, by manufacturers generally?

A. The tendency of the demands were for machines that had a large clothes capacity.

I was connected with the National Household Devices Company for years.

XQ172. That company had in its organization a very large number, quite a large number, of manufacturers of washing machines?

A. I was the president of the association for several years.

The manufacturers interchanged information concerning their practices, to a great extent. I think I knew generally what was going on throughout the entire industry.

XQ175. What you have said in regard to the practice of the Nineteen Hundred Company was generally the practice as far as the capacity of the machine was concerned, was it not?

A. I repeat, the tendency of the times called for large capacities in washing machines.

XQ176. Prior to the time that the Nineteen Hundred
686 Company put out a machine like that shown in Defendant's Exhibit 12, the Nineteen Hundred Company did a large amount of experimenting before it put that machine upon the market, did it not?

A. Yes, they carried on a lot of experiments.

XQ177. What was that for?

A. We conducted an experimental department continuously for the progressive development of our machines, to keep abreast of the times.

XQ178. I call your attention to a photograph and ask you whether or not that shows various types of water impellers that you experimented with before you got to the form shown in Defendant's Exhibit 12. A. Yes.

XQ179. That shows different types of construction of water impellers that you tried out and tested before you finally adopted the form shown in Defendant's Exhibit 12, does it not?

A. Well, those were tests, various models we made to test out or develop water actions such as we thought would be satisfactory to the trade.

XQ180. All that was done prior to the time that you put Defendant's Exhibit 12 machine on the market, was it not? A. Yes, sir.

(Photograph marked Plaintiff's Cross Exhibit 4.) [Received in evidence as Plaintiff's Exhibit 20.]

687 XQ181. The substantial bulk of the sales of the Form 4 machine of the Nineteen Hundred Company were made in the first nine months of 1922, was it not?

A. That is my judgment.

XQ182. I call your attention to a photograph or illustration showing, the first two cuts that is, what appears to me to be the construction of Defendant's Exhibit 2-A, and the third view showing the illustration of the machine Exhibit 103, and I wish you would look at them and see whether they correctly show those machines, comparing them with the exhibits. A. I believe they do.

XQ183. Will you look at the interior of the machines so as to see the rub-board and see whether it corresponds exactly with the rubbing cleats and so forth in each instance.

A. I couldn't say it corresponds exactly, but—

XQ184. Well, compare it and see. I want to get as nearly an exact answer as I can.

A. It generally represents that machine.

XQ185. Isn't the arrangement of the ribs exactly as is shown in that exhibit? A. I believe that is so.

XQ186. The same thing is true of the 103, the third cut to the right? That illustration sheet illustrates it?

A. It looks the same, except this has got one less rib than is on the machine.

688 XQ187. The photograph shows that rib lacking too, doesn't it? A. Yes.

XQ188. Does that view correctly show the bottom of that 103 machine? A. Yes.

Mr. Lane: I offer that in evidence as Plaintiff's Cross Exhibit 5.

(Cuts marked Plaintiff's Cross Exhibit 5.) [Received in evidence as plaintiff's exhibit 5C at page 19 above.]

XQ189. You have never made any machine, that is the Nineteen Hundred Company, to your knowledge like Exhibit 2-A or Exhibit 103 since they abandoned the manufacture of it, have they? A. No.

XQ190. Yesterday you testified about the rub-board type machines made by the Dietz Company. Does this cut that I hand you correctly represent that type of machine which is generally known as the rub-board type?

A. That was known to me as the rub-board type.

XQ191. That is the type that the Dietz Company was making, with which you were familiar, were you not, for years? A. Yes, sir.

XQ192. And in that machine, as generally in rub-
689 board type machines, the rub-boards were vertically movable in the cover so that they would come down in contact with the clothes in operation, isn't that true?

A. That was the general principle.

XQ193. You don't know of any other? A. I do not.

XQ194. Are you familiar with the advertising that has been put out by the General Electric Company in connection with the sale of their machines of the gyrator type?

A. I receive all their literature, follow their ads in trade papers and so forth.

XQ195. I call your attention to three circulars and ask you whether those are circulars such as the General Electric Company sends out in connection with the sale of these gyrator type machines.

A. I have seen all of those before, read them. I assume the General Electric sent them out.

Mr. Bristol: I object to the assumption.

XQ196. They have been received by you, haven't they, from the General Electric Company? A. Yes.

690 Mr. Bristol: Well, have they been received from the General Electric Company?

The Witness: I can't say.

XQ197. That was the general character of advertising that you have seen the General Electric Company put out in connection with that? A. Yes.

Mr. Lane: I offer those in evidence, the three circulars, one entitled "Tur[illegible]monstrations Into Dollars", the other entitled "Introducing the Activator," and the third a full

page colored advertisement entitled "A New G.E. Double Tub Washer", as Plaintiff's Exhibits 6-1, 6-2 and 6-3.

Mr. Bristol: I object to this as insufficiently proved.

691 (Circulars marked Plaintiff's Exhibits 6-1, 6-2 and 6-3.) [These circulars are the ones received in evidence, over defendant's objection, as Plaintiff's Exhibits 16E, 16F and 16A, respectively, at page 97 above.]

XQ198. I call your attention to a circular entitled "Maytag perfects new principle of clothes washing." Did you see that circular about the time it was issued by Maytag in 1922? A. I can't say that I did.

XQ199. Did you see others substantially like it about that time?

A. At that time I was generally familiar with the Maytag advertisements.

XQ200. Wasn't that characteristic of the advertis-
692 ing that they were putting out at that time?

A. Well, I would say it was.

Mr. Lane: I will offer that in evidence as Plaintiff's Cross Exhibit 8.

(Circular marked Plaintiff's Cross Exhibit 8.) [This is the one received in evidence as plaintiff's exhibit 11B at page 29 above].

XQ201. Do you know substantially how many of the Exhibit 103 machines were made by the Nineteen Hundred Company? A. No. I can't recall.

XQ202. Comparatively few as compared with the 2-A, isn't that true? A. Yes.

693 XQ203. You said in your direct testimony that the Form 1, which was the cheaper class than the Cataract, which was more expensive, was superseded by the single-vane and multi-vane agitator type, did you not?

Mr. Bristol: I object to that on the ground that that is a misquotation of the previous testimony of the witness. I understood the witness to say that the Form 1, 2 and 3 machines were eventually superseded by the single-vane agitator electric, and then at a later date by the multi-vane agitator.

The Witness: That is a correct statement.

XQ204. It is a fact that after you started putting the single-vane and multi-vane agitators, the multi-vane being like Defendant's Exhibit 12, on the market, the other machines of the previous types were discontinued and aban-

doned and not manufactured by the Nineteen Hundred Company? Isn't that true? A. That is correct.

XQ205. Do you know what the speed of oscillation of the water impeller machines like Defendant's Exhibit 12 was?

A. The machine represented in Exhibit 12 had 60 oscillations per minute, complete oscillations.

Redirect Examination.

By Mr. Bristol:

Of those agitators illustrated in Plaintiff's Cross Exhibit 4 the agitator marked E substantially represents an agitator which was placed in production by the Nineteen Hundred Corporation. We called that a single-vane agitator.

694 Our company took out a patent covering the machine in which the single-vane agitator was incorporated. Patent No. 1,748,442 is the Davis patent covering the single-vane agitator machine.

(Copy of Davis patent 1,748,442 marked Defendant's Deposition Exhibit 6).

Referring to Defendant's Exhibit 12, showing the multi-vane machine, the agitator on that machine is known as a high center post agitator. Mr. Lane asked me about a Maytag machine, one of the early ones. The first I saw did not have a high center post.

RDQ215. As compared with that Maytag machine, the first one you saw, is there an advantage in a high center post?

A. You mean from the standpoint of washing or mechanical advantages?

RDQ216. From any standpoint.

A. I consider a high center post a disadvantage from the standpoint of turnover of washing, but a mechanical advantage because you do away with the stuffing box; that is, the bearing is above the water.

RDQ217. Had the Maytag machine appeared on the market at the time the Nineteen Hundred Form 4 machine, as exemplified in Exhibit 4, was developed and put into production?

A. I don't know that I can answer that. I have my opinion, again my judgment, that they simultaneously or almost so appeared on the market.

RDQ218. You didn't get the Maytag machine into the Nineteen Hundred experimental room until a considerable time after your Form 4 machine was sold, did you?

A. I can't remember the dates. It was the prac-

695 tice of the company to buy all new machines that appeared on the market as promptly as possible and test and observe them in our laboratories.

Recross Examination.

By Mr. Lane:

RXQ219. Do you recall whether the Maytag Company notified the Nineteen Hundred Company of the infringement of the Snyder patent in suit 1,866,779, after it commenced the manufacture and sale of the machine like that shown in Defendant's Exhibit 12?

A. I couldn't recall. I don't recall any specific letter bearing that charge. However, our patent negotiations were conducted by Mr. Merrell E. Clark. I wouldn't say that he was or was not notified on the machine shown in Exhibit 12.

RXQ220. You personally know that that charge was made directly to you, do you not? A. I beg your pardon?

RXQ221. You do know that that claim was made by the Maytag Company to you as a representative of the Nineteen Hundred, don't you?

696 A. I know there were negotiations between the Nineteen Hundred and The Maytag Company with reference to infringement, but I can't specify the day or date or letters, specific letters.

RXQ222. You don't recall the year, you mean?

A. No; I do not.

RXQ223. You do know that those were carried on some time in connection with that machine? A. Yes, I do.

Mr. Lane: That is all.

Redirect Examination.

By Mr. Bristol:

RDQ224. What were those negotiations about, Mr. Behan?

A. Well, as I recall them, they ran something to the effect that we were infringing the so-called Snyder patent.

RDQ225. Is that all? A. That is substantially all.

RDQ226. For whom was the Nineteen Hundred Cor-
697 poration making these machines which are illustrated in Defendant's Exhibit 12?

A. Well, for our customers.

RDQ227. Was there any particular one who was larger than any of the others?

A. Yes. We made a large quantity for Sears, Roebuck.

RDQ228. Do you know whether the Maytag Company had threatened Sears, Roebuck under the Snyder patent on account of that machine?

A. I personally never saw any letters to that effect, but I was informed by those who represented Sears that there was a possibility of litigation.

RDQ229. What was the situation that developed as between Sears, Roebuck and Nineteen Hundred as the result?

A. There was a combination between a company known as the Upton Company, in which Sears had an interest, and the Nineteen Hundred.

RDQ230. Was the business of Nineteen Hundred in making these multi-vane machines for Sears, Roebuck endangered by this threat on the part of the Maytag Company?

A. I don't know how seriously they considered it.

RDQ231. Did Nineteen Hundred eventually take a license under the Snyder patent? A. Yes, sir.

698 RDQ232. Did Maytag take a license under the Davis patent No. 1,748,442, Defendant's Exhibit 6?

A. They did, yes, sir.

RDQ234. What were the factors which Nineteen Hundred took into consideration in taking that license?

A. Probably on my recommendations, on the general theory that I believe in sustaining patents of merit, and I recommended that we to avoid litigation—it was probably to the interest of my company to bring about such a condition.

RDQ235. Isn't it a fact that it was cheaper to take that license than to fight?

A. I can't answer that, but I think it was further motivated by the fact that Sears, Roebuck Company were inclined more toward the multivane agitator.

RDQ236. But they would not handle it if there was any question of patent infringement?

A. I think that would be good judgment on their part, yes.

RDQ237. As a result of taking the license you retained the Sears, Roebuck business, did you not?

A. From the time the company obtained their business they continued its retention.

RDQ238. If Nineteen Hundred had decided not to take the Snyder license would it have retained the Sears, Roebuck business?

A. I couldn't say.

RDQ239. You know that there was a serious ques-

699 tion of losing that business, don't you?

A. I was sure; that is, it concerned me somewhat because I was responsible for the Nineteen Hundred affairs.

RDQ240. At that time you held what office in the Nineteen Hundred Company?

A. President and general manager.

By Mr. Lane:

RXQ241. The Sears, Roebuck Company now owns and controls the stock of the Nineteen Hundred Company, does it not?

A. It is my understanding they dominate, not own, and control the stock.

700 WATSON A. OSGOOD, a witness for the defendant. Testimony taken by deposition at New York, October 27, 1937.

Direct Examination.

By Mr. Bristol:

My name is Watson A. Osgood and my residence is 126 Ruhamah Avenue, Syracuse. My occupation is selling washing machines; selling laundry equipment. The business is my own business. I am the same Watson A. Osgood who testified at the trial of the case of The Maytag Company vs. Brooklyn Edison Company in Brooklyn some two years ago. I have no connection with either The Maytag Company or the General Electric Supply Corporation nor any interest financial or otherwise in the outcome of this particular suit. I have been in the business of selling washing machines since August 1, 1911. I have handled a line of machines put out by the Nineteen Hundred Corporation of Binghamton known as the agitator electric machines. I can't give you the date when I commenced to sell such machines, but just as fast as the Nineteen Hundred got them ready for the market, and I can't remember the date. There were three types of those agitator electric machines. They were known as Forms 1, 2 and 3.

Q12. Can you identify among the washing machines in this room any that is representative of the Nineteen Hundred Form 1 machine?

A. That is the wooden tub machine back here.

Mr. Bristol: The witness refers to the machine which has been marked Defendant's Deposition Exhibit 2-A [now
701 Defendant's Exhibit 27].

I have examined a catalogue which has been marked Defendant's Deposition Exhibit 10 and can identify that as like catalogues which I have previously seen. I had in my own business catalogues like that. I got them from Nineteen Hundred Washing Machine Company. It would be hard to say when. They furnished us with all this stuff just as fast as they got it off the press.

Page 7 of the catalogue, Exhibit 10, correctly illustrates the Form 1 machine such as I sold. I also sold Form 2 and Form 3 machines. Those were as described on pages 8 and 9 of the catalogue, Exhibit 10. The photograph which has also been marked Defendant's Exhibit 10 in this case is Form 3.

Q21. Can you pick out from the washing machines in this room any which is representative of the Nineteen Hundred Form 3 washer?

A. That one there (indicating).

Mr. Bristol: The witness points to the machine which has been marked Defendant's Deposition Exhibit 103 [now Defendant's Exhibit 20].

I know a Mrs. Laura Wensley, of Syracuse, New York. I sold a Nineteen Hundred Washing machine to her. I sold her a Form 3 washer and I demonstrated it to her on New Year's Day, and I believe it was 1920. I had almost forgotten. Her name at that time was not Mrs. Wensley. I
702 believe it was—her last name was Mrs. Laura Raber at that time.

I can identify a conditional sales contract dated 1/1/20, which has been marked Defendant's Exhibit 102 in some prior cases. That is for an electric Form 3, $135, to Laura C. B. Raber on January 1, 1920. The name W. A. Osgood appears near the top of this document. I am the W. A. Osgood referred to there. That was the sort of form that I used in my business. This is the original document that was made out and signed on the date that it appears. The sale was actually made on that date. Delivery of the machine took place prior to that.

(Conditional sales contract marked Defendant's Deposition Exhibit 102).

I have seen the machine that I sold to Mrs. Raber, now Mrs. Wensley, after the time that the sale was completed. We serviced it a few times for her while she had it, put on new belts and one thing and another. We got the machine back; we gave her a new machine and took that in trade. I took that back in trade on October 12, 1931. The machine had been in operation over the period from 1920 to 1931.

I can identify a paper the title of which is "Speed Queen Washer" "Conditional Sales Contract", and dated October 12, 1931. That is the conditional sales contract by which we sold Mrs. Wensley the new machine and took the
703 Form 3 in trade. I refer to her now as Mrs. Wensley; she had been remarried. I can identify the signature down at the foot, "W. A. Osgood"; it is mine and in my handwriting. Just above the signature is a date, October 28, 1931; that is in my handwriting. It must have been October 28th when I put that signature and date on there. I can identify the Form 3 machine which I have been talking about as the one that I sold to Mrs. Raber in 1920 and took back from her in 1931. That machine is right there (indicating).

Mr. Bristol: The witness refers to Defendant's Deposition Exhibit 103 [now Defendant's Exhibit 20].

I id ntify that particular machine as the one by the serial number of it. The serial number on that machine is N. U. C. 113.

After I took that machine back in trade I took it down to my own home. My wife's old washing machine broke, so I took that down there. My wife actually used it for washing. Then when Mr. Geldhof asked for one of the washing machines I went and got it. Mr. Geldhof was the engineer of the Easy Washer Company.

Q58. How does the condition of this machine Exhibit 103 today compare with its condition at the time that you sold it originally in 1920?

A. Well, of course it isn't a brand new machine, but as far as I know it is in good working order right now.

704 Q59. There have been no structural changes in it in the meantime?

A. No.

In my business I sold lots of Form 3 machines. I can identify six conditional sales contracts which have been marked Defendant's Exhibit 104 in other cases. They are all for the Form 3 washers and they represent sales that were made by me. The dates on the conditional sales contracts are the dates of the sales. The dates on the contracts are February 2, 1920, March 9, 1920, March 10, 1920, April 12, 1920, April 17, 1920, May 11, 1920.

(Six conditional sales contracts marked Defendant's Deposition Exhibit 104.)

(Speed Queen Washer conditional sales contract marked Defendant's Deposition Exhibit 101.)

The Nineteen Hundred Washer Company brought out another form of washing machine; it was called Form 4. It was a round tub washer, only the agitator was in the bottom. I identify a photograph which is marked Defendant's Deposition Exhibit 18. That is Form 4. I believe I first saw these Form 4 machines in the fall of 1921.

I first saw them at a sales meeting at the Nineteen Hundred factory at Binghamton. They called a lot of us fellows in there on a three or four days' convention, and during the conventio i they brought this new type washer into

705 the sales room and showed it, and everybody was very enthusiastic. They demonstarted the machine in op-

eration. I don't just recall who was the main one, but Mr. Quinn, if I remember right, was the chief spokesman at that meeting. I have always called Mr. Quinn Bob. I think his name is Robert; I don't know.

I placed an order for the new machine; I ordered three. I received the machines that I ordered; I can't tell you the date, but it was about the middle of January 1922.

Q84. I show you a copy of an invoice which has been marked Defendant's Deposition Exhibit 14 in this case and I ask you whether you ever received an original invoice covering the same subject matter?

A. Well, I must have, because here is a billing copy.

I am the W. A. Osgood referred to on that invoice. The address on that invoice is 908 South Salina Street, Syracuse, New York; that was my place of business. That machine there (indicating) Defendant's Deposition Exhibit 4 [now Defendant's Exhibit 29] exemplifies the Form 4 Nineteen Hundred machines such as I ordered and received. After examining the serial number of the machine, Exhibit 4 [now Defendant's Exhibit 29], I find it is one of the identical machines which I received in January, 1922. The serial
706 number on that machine is S-1033. That corresponds with the last number on the invoice, Defendant's Exhibit 14.

Q93. Can you tell what happened to that machine after you received it?

A. We had already taken orders for them and we delivered it as soon as it arrived.

I had taken an order, against which this machine was delivered, from Mrs. H. P. Sidman. There was a record made of her order as a part of my regular business. It was a regular order blank that we had. We filled it right out at the time the order was taken. I can identify a paper headed "W. A. Osgood, Laundry equipment of quality," which has been marked Defendant's Exhibit 105 in previous cases. That is an order for that Form 4 washing machine for Mrs. H. P. Sidman. That order was made out December 5, 1921. This particular order was made by Mrs. Osgood, my wife. At that time she helped me conduct my business. I myself knew at that time that that order had been made out or was being made out. Mr. Sidman wanted to give his wife a washing machine for a Christmas present and he was in the place talking with Mrs. Osgood and myself, and he told us that just as quick as we got the washing machines to bring one up to her and on Christmas Day if they weren't there he

would present Mrs. Sidman with a receipted bill for the washing machine, so Mrs. Osgood wrote the order out.

(Order marked Defendant's Deposition Exhibit 105.)

707 This particular machine was always in good working order. We had to repair it two or three times, but it was in working order all the time they had it. They had it up until some time the first of the year 1935, I believe. At that time Mr. Geldhof wanted a washing machine of that type and I went and got it. It is the same now as at the time I originally sold it except that it is used. The wringer was on it when I sold it.

The washing which was performed in that machine was very satisfactory. I saw this machine, Exhibit 4, [now Defendant's Exhibit 29] in operation. I also saw a demonstration of a Form 4 machine at the Nineteen Hundred plant in Binghamton in the fall of 1921. Those two were just the same. I demonstrated the Form 4 machine myself.

In that machine the agitator throws the water out to the side of the tub and up over and down into the middle. It turns the clothes over as you start putting them into the water. The normal load of clothes for the Form 4 machines was 6 pounds. With such a normal load the clothes rolled over as I have described. Respecting the effect with this machine as to uniformity of washing, well, it has got to wash uniform. If you use 6 pounds of clothes and the clothes turn over, they have got to wash uniform.

708 Cross-Examination.

By Mr. Lane:

They have got to wash uniformly, because, if the clothes keep turning over and over, they will have to wash uniform; because they get the water action, all the same amount of water action. The clothes rolling from the center out and up and over will give you the same amount of water action on all the different clothes.

The clothes do not necessarily roll over as a mass in this proceeding. That is not the general action with 6 pounds of clothes in it.

709 WALTER H. BARNHART, a witness for the defendant.

Testimony taken by deposition at New York, Oct. 29, 1937.

Direct Examination.

By Mr. Bristol:

I live at 224 Derby Street, Johnstown, Pennsylvania and I am a roller in a steel mill. I was living in April 1934 at the present address. I am the same Walter H. Barnhart whose deposition was taken at Johnstown, Pennsylvania, in April of 1934, in connection with a suit brought by The Maytag Company against the Brooklyn Edison Company. I have no connection with either The Maytag Company or the General Electric Supply Corporation nor any interest in the the outcome of this suit, financial or otherwise.

I am acquainted with a Mr. Harry E. Barnhart of Johnstown, Pennsylvania; I am his brother. My brother's occupation today is foreman in a steel mill. He has been engaged in other business; in the electrical supply business. He had to do with the sale of washing machines.

He sold me the first washing machine I ever had. I got that washing machine some time in the fall of 1919. Harry had just built a new house that year, and in order to pay for the machine I done some work on his house. I done some concrete work to help pay for the machine. That is how I fix the date.

I don't still have that machine that I bought at that time. I disposed of it when a representative of the Easy Washing Machine Company took that machine in 1934, I think. That was at the same time my deposition was taken before.

710 I can identify one of the machines in this room as the machine which I [brought] back in 1919. It is this machine sitting here to the right (indicating).

Mr. Bristol: The witness refers to a machine which has been marked Defendant's Exhibit 22 in two cases in the United States District Court, for the Southern District of New York, Equity 75-202, and Equity 81-257, and has also been marked Defendant's Exhibit 22 in a case in the Eastern District of New York, Equity 63-88. I ask that this machine be marked Defendant's Deposition Exhibit 22 in this case.

(Machine marked Defendant's Deposition Exhibit 22 [now Defendant's Exhibit 19]).

The Witness: There was an identifying mark on the machine when I bought it. There was stencilled on the side of it

"Seamless Tub made by William S. Miller, Meyersdale, Pennsylvania." I have examined the machine, Defendant's Exhibit 22 and I find the stencilling thereon to which I have just referred. I painted the machine. I painted right over the stencilling, but that paint has now been scratched off so as to reveal the stencilling.

Q26. How does the condition of the machine as it stands today compare with the condition of it at the time you bought it in 1919?

A. It is worn a great deal. Outside of that it is practically the same.

Repairs have been made on it. I have put some cleats on the bottom of the agitator, two new ones. I have put
711 two new gears on it, and that stick there on the side, whatever you call that. The purpose of that stick was to hold it in gear so it would not kick out.

After I bought the machine it was put to use. It was in use from 1919 until they took it in 1934, I think. My wife operated the machine. My wife's full name is Verne M. Barnhart. She also gave a deposition at Johnstown, in 1934. I took between 10 and 15 minutes to wash clothes in this machine.

I have seen washing machines somewhat similar to Defendant's Exhibit 22 [now Defendant's Exhibit 19] but having a tub with corrugated sidewalls. I see such a machine in this room. The machine that I am referring to is the machine to my back here (indicating).

Mr. Bristol: The witness refers to a washing machine which has been marked Defendant's Exhibit 21 in the same cases, Equity 75-202 and 81-257, in the Southern District Court of New York, and Equity 6888 in the Eastern District of New York.

The Witness: My brother, Harry E. Barnhart, had that machine, and he showed it to me already when I was at the place. I saw that some time in the same year I bought mine, 1919. At the time I saw it, it was in the basement of his home. I was not doing any work in the basement at the time I first saw it. It was there when I did the cellar floor; I had to move it.

712 Q46. Are you able to identify this Exhibit 21 as the same machine that you saw there at that time?

A. I identify the same tub. It is a corrugated tub.

(Machine marked Defendant's Deposition Exhibit 21.)

5803

Cross-Examination.

By Mr. Jeffery:

I said I painted the machine over and covered up the stencil of the names that I mentioned. I did not see any other inscription or stencil on the machine that was covered up with the paint, that I remember. I didn't ever notice whether there was any notice of a patent on it. I never saw it or never noticed it.

I said I replaced two cleats on the agitator of that machine, Exhibit 22. I got those cleats from Harry Barnhart.

XQ52. What was the matter with the cleats that you replaced?

713 The cleats that I replaced were split. One of the cleats on the agitator is split now. The board on the top of the agitator had not split.

XQ55. Take a look at it, please, and tell me what was the reason for nailing the two strips across the top.

A. There was two heavy steel plates on top of there and the screw holes became worn and would not hold any more, so I took those off and put wooden ones on, that is, these two (indicating).

XQ55. When you first got it there were two heavy steel plates on it?

A. About as heavy on this side there (indicating).

I don't have any idea how much that whole agitator weighed with those steel strips on it. The whole machine weighed around 400 pounds.

I operated the machine myself very, very seldom. I did watch its operation.

714 I know how the agitator worked underneath there on the clothes. It took hold of the clothes, and swished them around. It swished them around in the water, back and forth.

The agitator did not move up and down on the shaft. It was not fastened in a permanent position on the shaft, but it didn't move up and down; it just moved around.

XQ67. But it would adjust itself to the amount of clothes that was in the tub? A. That is right.

As it moved around it would not move around over the tops of the clothes that were under it; it would move the clothes around with it.

715 XQ69. It would not rub the clothes?

A. It may a little bit, not much.

I said that a representative of the Easy Washing Machine Company took that machine away from me; he did not pay me for it, he gave me another washer to replace it, an Easy Washer, not such a good model. It was a good looking machine. My wife likes it as well as Exhibit 22; she likes it better.

I couldn't see much of the strain on the wooden ribs on the bottom of the agitator in the operation of the agitator. I account for their splitting so that I had to replace them because of drying out and getting wet and drying out again.

XQ80. Don't you think that the action of the ribs on the clothes or the clothes on the ribs would have a tendency to wear them down, smooth them out?

A. It more than likely would have a little, not much.

XQ81. If you look at those ribs they are pretty smooth, aren't they?

A. They have been run for fifteen years.

XQ82. When you testified before in Johnstown in the suit of The Maytag Company against the Brooklyn Edison Company you said that it took four men to carry this machine out of your house. Do you remember that? A. Yes.

XQ83. That was because it was so heavy, wasn't it?

A. That is right.

XQ84. You testified then that it weighed about 450 pounds.

A. I don't remember that.

716 XQ85. Well, the fact is that when I asked you, "Why did it take four men to carry this comparatively small machine?", you said, "It weighs about 450 pounds." If you said that then that would be correct, wouldn't it?

A. It would. I said about that.

XQ86. Do you recall how much you paid your brother for that machine—not how you paid it, but what was the full purchase price?

A. It was something over a hundred dollars. I can't remember the exact amount.

XQ87. If I may remind you from the former testimony, was it not $135 in labor and cash?

A. Possibly it was. I just don't remember now.

XQ88. Did you ever see any Miller machine like the one that you owned, which is Exhibit 22, during that particular period? A. I never saw one like it.

XQ89. Did you ever see any machine of the corrugated type, such as Exhibit 21, other than that particular machine which you say you saw in your brother's basement?

A. No, I haven't.

(Witness excused.)

717 VERNE M. BARNHART, a witness for the defendant.

Testimony taken by deposition at New York, Oct. 29, 1937.

Direct Examination.

By Mr. Bristol:

I live at 224 Derby Street, Johnstown, Pennsylvania. My occupation is housewife. I resided in April, 1934 at 224 Derby Street. I am the same Verne M. Barnhart whose deposition was taken at Johnstown, Pennsylvania, in April, 1934, in a suit by The Maytag Company against the Brooklyn Edison Company. I have no connection with either The Maytag Company or the General Electric Supply Corporation nor any interest, financial or otherwise, in the outcome of this suit.

The Walter H. Barnhart who has just testified is my husband.

I have used a washing machine. I got my first one in November, 1919. I fix that date by the fact that we had a new baby and we got the machine when the baby was about a month old. His birthday is October 3, 1919. We had that machine up until 1934. I can identify among the machines in this room the machine which I got in November, 1919. It is this one here (indicating).

Mr. Bristol: The witness refers to Defendant's Deposition Exhibit 22 [now Defendant's Exhibit 19].

The Witness: That machine was purchased by us in 1919 from Harry Barnhart. He is my husband's brother. Harry Barnhart delivered the machine to us.

Q20. Did you use the machine much during the time from 1919 until 1934?

A. I used it every day while the babies were small. Then as they got a little older, about every other day and
718 twice a week, and then a little later on once a week.

We were not living in 1919 at the same place where we are now living. We lived at other places in between. When we purchased the machine we lived at 1341 Franklin Street, we moved from there to 224 Derby Street, and from there to 7 Shady Lane, and from there back to Derby Street. All those places are in Johnstown, Pennsylvania. The machine remained in our possession at those different addresses all the time.

I was able to do very good washing with this machine. It took 10 to 15 minutes to wash a load of clothes.

Q29. What were the circumstances under which you gave up the machine in 1934?

A. Well, this representative from the Easy came out and wanted to know if they could take the washer and I said they could if they gave me another one, because it needed repairs anyway.

Q30. Had you done any washing with this machine shortly before they took it away?

A. Well, I don't remember correctly, but I believe I was washing when they came for it, or it was either the day before.

719 Cross-Examination.

By Mr. Jeffery:

XQ31. This Easy machine which the representative of that company gave you in exchange for the old machine is still in your possession? A. Yes, sir, it is.

XQ32. You are still using it? A. Yes, sir.

XQ33. Do you like it? A. Very much.

XQ34. It is a modern machine, isn't it? A. Yes.

XQ35. Do you notice the way it works? A. Yes.

XQ36. It has blades that come up from the bottom of the machine under the clothes? Do you see what I mean? Instead of the blades here on the agitator (indicating) going over the clothes, on the Easy machine they come up under them? A. Well, it is on the bottom.

XQ37. You haven't noticed that very much?

A. The blades are in the bottom of the agitator. It doesn't come up; it goes down on the clothes.

XQ38. Down on the clothes?

A. Oh, no. That is right, it is on the bottom.

XQ39. I am just trying to identify the machine.

A. It is on the bottom.

XQ40. Is it called an agitator machine on it? Have you noticed whether there is a stencil on it?

720 A. No, I haven't noticed any "agitator" on it.

XQ41. You like the way it works?

A. Yes, I do.

XQ42. Have you noticed how the Exhibit 22 Miller machine worked?

A. You mean about swishing about?

XQ43. Yes; the ribs in that machine depended from the agitator down into the clothes, didn't they?

A. Yes.

XQ44. And they moved the clothes back and forth?

A. Swished them around.

XQ45. Swished them right around, the ribs having hold of the clothes as they moved?

A. It would move the clothes, yes.

Mr. Jeffery: That is all.

Redirect Examination.

By Mr. Bristol:

After I had put the water and soap and clothes in the tub of my machine, Exhibit 22 (now Defendant's Exhibit 19) I then put the agitator on top of the post in the center.

RDQ47. How far down would the agitator go?

A. It depended on how many clothes you had in it.

RDQ48. Would it sink in the water or would it stay up near the top of the water?

721 A. It would sink a little bit.

RDQ49. When you started the machine in operation what happened?

A. It swished the clothes around. It would go so far one way and then around the other way.

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722 JOHN N. LINT, a witness for the defendant.

Testimony by deposition taken at New York, Oct. 29, 1937.

Direct Examination.

By Mr. Bristol:

My present residence is Meyersdale, Pennsylvania. I am operating a machine shop, welding, general repair welding, woodworking. My residence in April, 1934 was Meyersdale. I am the same John N. Lint whose deposition was taken at Johnstown, Pennsylvania, in April, 1934, in connection with a suit by The Maytag Company against the Brooklyn Edison Company. I have no connection with The Maytag Company or the General Electric Supply Corporation nor any financial interest in the outcome of the present suit. I was connected with the Miller Manufacturing Company on two different occasions, from 1912 to 1917 and from 1919 until 1928, when it was closed out. That company was located at Meyersdale, Pennsylvania. The business of that company was manufacturing washing machines and appliances for threshing machines.

I am acquainted with William S. Miller. He founded the Miller Manufacturing Company. The company was incorporated in 1910 and he left in 1913. Mr. Miller is in his eighty-third year today.

I saw Mr. William S. Miller at the factory of the Miller Manufacturing Company on frequent occasions after he had ceased to be the general manager of the company in 1913.

Q14. Will you tell us how you happened to see him and what he was doing there?

723 A. The company had built wooden tub washing machines, and Mr. Miller after leaving the company had developed an all-metal tub, a cast iron tub porcelain enameled, and he had the machine work on the gearing made in a small town south of Meyersdale, Springs, Pennsylvania, and the frame and part of the assembly he had done in the shop in the works of the Miller Manufacturing Company.

Q15. What was he doing himself in the factory of the Miller Manufacturing Company?

A. He was building these washers for himself.

Q16. Did he do any of the work right there on the premises? A. Yes, sir.

The gap in my connection with the Miller Manufacturing Company was during my service during the war. I was in the United States Navy from April 17, 1917, to August 25, 1919.

Q20. Were you sufficiently well acquainted with the work that Mr. William S. Miller was doing, before you went into the Navy, to tell us what sort of washing machine he was building at that time?

A. The first one he developed, the original tub had corrugations in the side of it, and through pattern failures at the foundry he was obliged to change that, and when I came back—

724 Q21. Just a minute, please. Of what material was that made?

A. It was made of cast iron.

Q22. Was there anything on top of the cast iron?

A. Enamel, porcelain enamel.

Q23. Will you tell us whether you can identify any of the machines in this room as representative of the machines which you saw Mr. Miller assembling at the plant of the Miller Manufacturing Company before you went into the Navy?

A. I can identify the one with the corrugated tub.

Q24. Will you just tell us which one that is?

A. The one to my rear, sir.

Mr. Bristol: The witness refers to a machine which has been marked Defendant's Deposition Exhibit 21 [now Defendant's Exhibit 28].

The Witness: I would imagine I saw about a dozen of such machines before I entered the service. In connection with these machines I saw Mr. Miller assembling the various parts

to complete the machine. I saw machines completed They were identical with that machine, Defendant's Exhibit 21 [now Defendant's Exhibit 28].

Mr. Miller styled the first machine the "Porcelain Age." He had that stencilled on the machine along with his name and address. I have examined Defendant's Deposition Exhibit 21 [now defendant's Exhibit 28]. The largest part of
that stencilling is obliterated, but from that I can de-
725 termine the original stencil "Porcelain Age" with his
name and address.

I have seen machines like Exhibit 21 [now Defendant's Exhibit 28] in operation. The agitator moves in approximately a semicircle and completes about 40 cycles a minute —that would be 80 reversals the agitator makes—and he at one time had the idea that if that agitator were weighted it would do better washing, and some he had sent out with weights on them to set the agitator deeper in the water. The action of the machine is for the agitator to get a hold into the clothing and move them around in the tub to create an action between the water and the clothes in the tub to do the washing. The drive on this machine Exhibit 21 [now Defendant's Exhibit 28] is underneath the tub. The water is kept from leaking out of the tub by a standpipe that comes through the bottom of the tub that reaches higher than the normal water level of the machine when it is loaded. A shaft goes through the standpipe, at the top of which is fastened the sleeve which drives the agitator.

After my service in the U. S. Navy, I re-entered the employ of the Miller Manufacturing Company in October, 1919. Mr. William S. Miller was still working there. The style of the machine he was then making was the same as he had been making when I went into the service, but he had altered the tub. He had difficulty in getting the pattern to hold up
with the corrugations in it, and the foundry advised
726 him it would be a more substantial pattern if he had
that made without the corrugations, a perfectly smooth tub inside, which he changed about and was building at the time I knew him then. I can identify a machine in the room as representative of the machines which Mr. Miller was building when I came back to the Miller Manufacturing Company in 1919; the one to my right.

Mr. Bristol: The witness refers to Defendant's Deposition Exhibit 22 [now Defendant's Exhibit 19].

The Witness: I saw Mr. Miller assembling these smooth tub machines like Defendant's Deposition Exhibit 22 [now

Defendant's Exhibit 19]. The action of the agitator in the machines like Exhibit 22 [now Defendant's Exhibit 19] was similar to that of the earlier machine he had made. The agitator operated through an arc of approximately 180 degrees. He had it at that time at a speed of 40 to 42 maximum complete oscillations per minute.

Q46. Can you say approximately how many machines like Exhibit 22 you saw Mr. Miller working on?

A. I couldn't give you a very definite answer on that, sir, because I saw practically all, I suppose, that he had built from that time on, while not in the shop, in a shop he had at home. The later machines I did practically all the machine work on the gearing and helped him somewhat in the assembly of them too. The last machine he had made I even
727 made the patterns for the particular style gearing for it.

Q47. How long did he continue to make these machines?

A. He must have quit about 1924 or 1925.

Q48. Do you know why he quit?

A. Well, it was unprofitable to him.

Q49. How much was he selling the machines for?

A. He would sell them for about $100 and have at least all of that in material. For his labor he had nothing.

Q50. Did Mr. Miller personally make any other types of machines than the two illustrated by Exhibits 21 and 22 here?

A. Not indfvidually he did not.

Q51. When the tubs of these machines are filled with water and the clothes are in the tub and the agitator is put on, what is the position of the agitator with respect to the surface of the water?

A. It submerges to a certain extent. The water of course buoys it up, but water-logged, as it naturally is in a washing machine, it sinks below the natural level more than it would dry. Design patent No. 53,745 to William S. Miller, Meyersdale, Pennsylvania, patented August 26, 1919, for a washing machine tub, shows Mr. Miller's first tub, the corrugated style.

(Copy of the design patent No. 53,745 marked Defendant's Deposition Exhibit 25).

Mr. Miller told me he had it patented, sir.

728 Q54. These machines Exhibits 21 and 22 are equipped with overhead agitators or top agitators. Did you ever have anything to do with the design of an underwater agitator for a washing machine?

A. I had. I had designed and constructed one.

Q55. Will you tell us the circumstances, please.

A. The company's business had fallen low in 1920 and I was obliged to seek some other employment. I worked about a year in a local machine shop, and during that time I developed a new style agitator to use in a washing machine—that was driven from the bottom, a submerged disc type — and completed the first of these machines about, I believe it was, December, 1922. Mr. Miller had watched this very closely. He objected to a lot of it in principle and really could not find much favor with it. He had before this time employed a worm gear to drive his machine and it was very unsuccessful, he had to discontinue it, and when I proposed to use a worm gear in this, of course that met his main objection right there, but the style of gearings I used was somewhat a diffrent design from his and it has proven very satisfactory; but the disc was the chief part of the machine that was different from any that we had ever constructed or that Mr. Miller had built. It was a disc at the bottom of the tub, driven from underneath through a shaft coming through a stuffing box,
729 that had four vanes on it with a flat base about 15 inches in diameter; a cone at the center with sides at an angle 45 degrees to the base, the height of the blades. It was flat on top; the blades were sort of perpendicular to the base, too. It was entirely unconventional. There was no machine at the time using one like it, to my knowledge, and I had this machine just completed when Mr. Miller came dashing into the shop one morning and said, "I have seen a machine just like this, the one you are building." I said, "Where?" He said, "Down at the gas station. They took it upstairs while I was coming down the street. And I followed it right up." It proved to be a Maytag machine. After that I inquired into the patentability of it but never took a patent out and was concerned more with whether it was an infringement on Maytag's patent. I decided that it was not, because I had gotten copies of a bottom type agitator that was patented, as nearly as I can recall now, about 1879 or somewhere along there. That was a disc that covered the whole bottom of the tub and had raised ribs of possibly ⅛ths of an inch high extending from center all the way out to the edge of the disc. We manufactured possibly a hundred of them.

Q58. Had you ever seen or heard of the Maytag machine before this occasion when Mr. Miller came to tell you that he had just seen a machine like the one you had developed?

A. Not that style of machine. An earlier machine—they did a large business before that in power-driven machines, not electric; engine power washers.

730 Q59. What kind of washing mechanisms did those earlier Maytag machines have?

A. They had the peg dolly type.

Q60. Now, have you at my request prepared a rough sketch showing the agitator of the bottom position type which you have referred to?

A. I have. This is it, sir (producing a paper.)

(Sketch produced by the witness marked Defendant's Deposition Exhibit B).

Q61. Mr. Lint, will you mark on this sketch the descriptions of the various parts, with lead lines leading to them, and speak as you go along so that the reporter can get it?

A. The base of this disc is approximately 15 inches in diameter. Mounted on that are four vanes at right angles to each other and to the base.

Q61. Mark that "vane", if you will.

A. (Indicating) They were approximately 3 inches high and a quarter of an inch thick. At the center of the disc is a cone the height of the blades and with a face at an angle of approximately 45 degrees to the base of the disc.

Q62. Will you just mark that "cone", please?

A. (The witness illustrated) There is a raised edge at the outer periphery of the disc of approximately 3/16ths
731 of an inch above the plane of the disc. The purpose of that was to give the water a tendency to rise in the tub as it left the disc to guide it upwards to the outside of the tub. The face of that was about ¾ths of an inch.

Q63. When you had that machine finished how did it operate?

A. It operated to my entire satisfaction. It created a definite circulation in the tub. Loaded with clothing, it would draw the clothing down on the top of the disc, and the cone at the center prevented anything from holding or catching. The top of the blades being straight rather than raised at the outer edge, as a great many of them are, prevented that action also, and the clothing immediately left the disc and moved up against the side and down again on top of the disc. It created, I think, a better maintained circulation than any disc that has ever been used.

I started on this underwater agitator in the year 1920 and 1921. I had it practically completed at the end of the year 1922. That was the time to which I have referred when Mr. Miller came to tell me that he had just seen a Maytag machine. Prior to that particular time, I had never seen the submerged agitator Maytag machine. I had not seen any advertising or newspaper accounts or any other reference to such a machine.

732 Cross-Examination.

By Mr. Jeffery:

XQ69. Mr. Lint, have you had in your experience any work with drawings or in making the gears and other things you spoke about from drawings? A. No, sir.

I am familiar with working drawings, but they were never used.

XQ71. I am not thinking of any particular ones; I am trying to get your knowledge and experience. You are familiar with drawings? You can read them? A. Yes, sir.

I spoke about having examined some old patent. I read that myself. I examined the drawings myself. I understood the drawings.

I was, in the second period of my employment with the Miller Company, which I think I said extended from 1919 to 1928, familiar generally with the business operations of the company.

733 From 1919 to 1920, my father was in charge of the business and from 1921 until 1923, a Mr. Crawford, and from 1924 until 1928, myself. A Mr. Jenkins was connected with the company; he was there from 1915 until—from 1916 until 1919, I think, sir. He was general manager.

I recall that there was testimony given at Johnstown in the case of The Maytag Company vs. The Brooklyn Edison Company where I testified. Mr. Jenkins was there as a witness at that time. He testified as a witness.

I worked on all of the machines which Mr. Miller made which were like Defendant's Exhibit 22 here in the room. While he had parts made at other shops, the woodworking and some of the assembly was done at our shop.

I would not be able to tell you definitely approximately how many of such machines were manufactured. I don't recall.

734 I couldn't make a definite statement how many he might have made. I don't imagine it was much over a hundred. He didn't make too many of them. He couldn't have, because he was always pinched for capital on the thing. He would have to sell a machine before he could build it, practically. I know one year that he did make, I believe, about two dozen of them. That year I machined the castings for him, I think. He worked 24 sets at that time, but I don't believe they were all completed. One or two frames he had left, I think.

I did not, aside from working on these machines, in my knowledge of the business at the Miller Company know what was done with respect to selling the machines, how they were sold; that was his personal affair. The Miller Company employed salesmen for their product, but his was entirely separate from theirs. They did some advertising.

XQ91. Were you familiar with the advertising? Did you see any of it?

735 A. No—well, the catalogues, you mean. That type of advertising?

XQ92. Yes.

A. The catalogues and the folders they issued and the circulars.

XQ93. Illustrating the machines?

A. Yes, sir.

XQ94. You had seen those?

A. Yes, sir, all of those.

XQ95. I show you a circular bearing the inscription "Miller Manufacturing Company, C. F. Jenkins, Manager, Meyersdale, Pa." and entitled, "A Home Model" and also bearing the name "Model J," which appears to have been marked in evidence in the suit of The Maytag Company against the Brooklyn Edison Company as Plaintiff's Cross Exhibit No. 3. Can you say whether that was the circular issued by the Miller Manufacturing Company?

A. Yes, sir, that was.

XQ96. Was it issued and circulated during the time that Mr. Jenkins was manager?

A. It was.

(Circular marked Plaintiff's Cross Deposition Exhibit 9.) [received in evidence as Plaintiff's Exhibit 21.]

XQ97. The statements in that circular describing the operation of the machine appear to you to be correct, do they?

736 A. Yes, with the exception of the operation of the wringer. I would not call that correct.

XQ98. Well, we are not referring to the wringer. Now, when you went to work for the Miller Company in 1913 were they manufacturing machines made under a patent of Mr. Miller's?

A. Not under a patent of Mr. Miller's; they had purchased the patent.

XQ99. I mean a patent taken out by him.

A. No; the patent was granted to some person in the eastern part of Pennsylvania—I can't recall the name or location any more—but Mr. Miller had developed this washer

and found it conflicted too much with a patent already granted, and the result was that they obtained the patent rights of the inventor. I am trying to remember his name, too, but I can't.

XQ100. Did you ever see any of Mr. Miller's patents? He had patents, didn't he, besides this design patent which has been offered in evidence this morning?

A. Not to cover washing machines.

XQ101. You don't know of any patents of his which covered washing machines?

A. Only the earlier types. He had a square tub that he had built along about 1890, a wooden tub washer, square tub, that he called the Snowflake machine. Although I
737 never saw the patent on that, I knew it was patented, because he had it stamped as patented. That had an agitator, too, peg type, long pegs that came down the top of the washer, rather through them, that extended almost to the bottom of the tub.

I recognize the machine illustrated in patent 738,560 to William S. Miller of Meyersdale; that machine he styled the "Home Gem." I know something about the machines made under that patent; I helped make machines under that patent. I notice the illustration there of ribs; they were nailed on the inside of the tub.

XQ105. No; I mean the ribs on the agitator.

A. Yes, sir.

I notice the shape of them. I saw ribs of that shape in the plant of the Miller Company when I worked there; we made many of those. They were made in long lengths so that they could be cut off; long strips, moulded.

738 They are of the same shape as the ribs which were put on the machines or agitators of the machines like Defendant's Depositions Exhibits 21 and 22 [now Defendant's Exhibits 28 and 19 respectively] here in the room. They are near enough to be alike. The specifications were slightly different, but it was not enough to change the appearance of the block.

XQ111. So far as the operation of the agitator and the ribs on the agitator is concerned, it would be about the same on the machine of this patent No. 738,560 as on Defendant's Deposition Exhibit 22, wouldn't it?

A. The principle is the same, sir. (Miller patent 738,560 marked Plaintiff's Cross Deposition Exhibit 10). [Received in evidence as Plaintiff's Exhibit 22.]

Referring to the agitator on Defendant's Exhibit 22, he had increased the weight of that driving casting over the necessary amount, to give that agitator a tendency to sink in the tub; but the word "agitator" was original with that man. A lot of machines today use that. I am referring to Mr. William S. Miller.

739 Maytag itself says that it agitates the wash, and there isn't nothing to do that but an agitator.

XQ113. Mr. Miller desired to force these discs, as you have called them before, or the agitator, deeper into the tub and into the clothes than were the agitators on his former type of machine, is that correct?

A. Yes, sir, that is right.

XQ114. You testified to that in your former deposition at Johnstown in the suit against Brooklyn Edison, did you not?

A. I think I had, sir.

XQ115. And the driving shaft had considerable weight to it too, didn't it?

A. Yes, but that didn't—isn't in relation to the agitator, sir.

XQ116. In your prior testimony didn't you call the agitator a disc?

A. Yes, sir. This agitator when it is suspended is driven by a sleeve that is mounted on the end of that shaft, and the only weight that is assumed by the agitator is its own weight. The shaft or the sleeve, neither of them have any bearing upon the agitator in that respect at all.

XQ117. Now, in this Defendant's Exhibit 22 [now Defendant's Exhibit 19] machine the ribs, the bottom of
740 what you call the agitator, [depend] down into the clothes?

A. That is correct, sir.

The ribs are deep enough to create a washing action in a machine, and the dimensions of them are controlled by having them broad enough at the base that you can have them nailed securely enough to keep them on the disc. As the agitator moves back and forth in the water those ribs carry the clothes back and forth, to a certain extent. It is obvious that there would be also a certain amount of slip of the ribs on top of the clothes. That results in some rubbing or wiping. It would hardly be called rubbing, I wouldn't think. So these ribs agitate the clothing and carry the clothes back and forth —through the water as the agitator oscillates.

741 In that way these agitator ribs move the water and the clothes. The clothes are swished back and forth

through the water; the clothing are moved through the water, through and with the water.

XQ126. Now, you said that Mr. Miller didn't believe in your idea of what you called the submerged agitator, that is, an agitator at the bottom of the tub with ribs extending upward, is that right?

A. Well, he didn't object to that as much as the style of gearing I was going to use beneath it. I don't recall if he ever made a direct statement about his feelings toward that disc, but I remember he was very emphatic about the worm gear I was going to use. He was very curious to know what the outcome of that machine was going to be. He was there almost every day while I was working on it.

XQ127. Meaning your machine?

A. Yes, sir.

XQ128. To you that was a brand new idea, wasn't it?

742 A. Absolutely, sir, and laid flat quick. A representative of the Maytag Company came to me—that was when I was operating the shop,—and notified me that I was to discontinue the manufacture of those machines immediately, because it was a direct infringement on Maytag's patents, and he represented himself to be a district representative of the Maytag Company, located at Cumberland, Maryland, at the time. I told him I couldn't take that too seriously; if he would give me that in a letter over the signature of the president of the Maytag Company I would give it some consideration then, but not on his sayso, and I heard no more afterwards about it, because the company was dissolved in 1928.

XQ129. As you just said, the idea lay flat, you didn't do anything more about it?

A. Oh no, we built those machines.

XQ130. In 1923?

A. But I mean I had intended, of course, to patent that, but after Maytag had brought the machine out I knew there was no use of my trying to put a machine on the market to compare with that, because our company had not finances or any kind of equipment or anything. We built, I suppose, 100 to 150 of them. I couldn't say any more.

XQ131. You built them in 1923?

A. 1923 to 1928. I believe it was about 1927, because there was none of them manufactured—the company went

743 out of business in April, 1928, and there was none of them manufactured in the first part of that year. There may have been some of them sold.

I thought the idea of this last named machine was original with me. I thought it was an original idea, and a valuable one.

I had thought of taking out a patent on it until the Maytag machine was produced, and afterwards I saw no real use for it, because the Meadows Manufacturing Company built a machine that at 150 feet was a duplicate of the Maytag, and they apparently encountered no patent controversy, and it was chiefly on that grounds that we went ahead and built them.

Mr. Miller recognized the bottom-positioned agitator as a new idea to him. I don't know whether he recognized it as an original idea. He no doubt was acquainted with these earlier models. The idea of the disc at the bottom of the tub
744 really was not original with me. I really didn't consider it so at the time, but the particular design of that disc I did.

XQ138. Referring again to the question of the weight on the disc of machines like Defendant's Exhibit 22, [now Defendant's Exhibit 19] you recall that in the suit of Maytag Company against the Brooklyn Edison Company, you said that the older machines that were made had a heavier shaft, tending to force these discs deeper than the discs of this time. That is correct, isn't it?

A. I understand what you refer to now.

XQ139. That is at page 45. You were referring there to some earlier machines, is that the idea? A. Yes, sir.

XQ140. In which the discs did force the agitator down?

A. That was the machine that I spoke of as the patent being acquired for it. That had a square shaft—the gearing was on top of the lid and had a square shaft, and it went down on top of the load.

XQ141. Will you give me an idea as to what the weight of the agitator, that is, the whole agitator, weights on top and all, was in the machine like Defendant's Exhibit 22, which was made by Mr. Miller?

A. I think he used to consider that weight to be between 6 and 8 pounds. That would vary considerably with the kind of wood.

745 XQ142. In those machines the agitator had a certain range of movement on the shaft? A. Yes, sir.

XQ143. So as to adjust itself to the amount of clothes in the tub, is that right?

A. That was the idea, sir.

XQ144. But the ribs always rested on the top of the clothes?

A. That is correct.

XQ145. Do you recall testifying as follows in your deposition in the suit of The Maytag Company against The Brooklyn Edison Company, page 52, with respect to what is now Defendant's Exhibit 22 here in this room:

"The action of the agitator is to carry all of the clothing, and after a certain length of time, that action to a certain extent takes place and all the clothing in the tub moves through the water, but the first washing action takes place in the tub, as I see it, directly beneath the disc, but later on all the clothing in the tub are cleaned by the action of the disc, the back and forth action, because if the action only took place on top, you could run the machine for a lifetime, and only the clothing on top would be washed."?

My question is, Do you remember so testifying?

A. I recall that.

XQ146. That statement was correct, was it not?

A. That statement was correct.

XQ147. On each of the agitators in Defendant's Ex-
746 hibits 21 and 22 here in the room there is a circular iron casting, isn't there?

A. There is, sir.

XQ148. As to Exhibit 22, how much does that casting on top of the agitator weigh?

A. I would imagine a pound and a half.

Redirect Examination.

By Mr. Bristol:

RDQ149. Mr. Jeffery read to you certain testimony which you gave in your previous deposition. Will you re-state now the idea that you intended to convey as to the washing of clothes in machines like Exhibit 22.

A. The action in the machine is in this manner: The tendency of the disc is to carry the clothing with it, and the action that is seen in the tub is naturally that the disc appears to slide around on top, and I imagine you use the descriptive word "swishing" for that, but that can't be all the action in the tub or, as I said, as you just read, the clothing would not get washed however long you ran the machine. That action must go deeper and farther, and it is the amount of that movement that isn't lost that does the washing in the machine—the amount of movement that isn't lost in relation to the movement of the clothing in the washer.

RDQ150. Do the clothes turn around in the tub so that
747 they change position from time to time?

A. The clothing could not keep the same position in the machine that you put them in when the machine is started. That would be impossible.

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748 HARRY E. BARNHART, a witness for the defendant. Testimony by deposition at New York, October 29, 1937.

Direct Examination.

By Mr. Bristol:

My present residence is 193 Worth Street, Johnstown, Pennsylvania. I resided in April, 1934 at the same residence. I am the same Harry E. Barnhart whose deposition was taken in Johnstown in April, 1934, in connection with the suit of The Maytag Company against The Brooklyn Edison Company. I have no connection with either The Maytag Company or the General Electric Supply Corporation nor any interest in the outcome of this suit. My present occupation is Foreman in a steel mill.

I sold washing machines from 1917 to 1930. I didn't have any store until about 1928. From then until 1930 I was located on Derby Street in Johnstown.

The first washing machines that I sold were manufactured by William S. Miller of Meyersdale, Pennsylvania. The way I came to sell those, my wife and I were up at her aunt's home at Meyersdale, which was also the home of William S. Miller. We were visting at my wife's aunt's. Mr. Miller came down to my wife's aunt's on one of the days that we were there—I think late in the fall of 1915—and during the course of our conversation he asked me if I owned a washer, and I told him I did not, and he asked me if I would be interested in one. I told him I would if the price were right,
so he took me up to his home—he had a shop in the
749 rear of his home where he was building washers—and
he showed me these washers, which were only partially completed at that time, and he told me that if I would pay him $45 in advance of the receipt of my washer that he would give me one at that price. I gave him, I think, $30 at that time, and a week or so later I sent a check to my wife's aunt, that is, payable to her, for $15, with instructions for her to give the $15 to Mr. Miller as the final payment on the washer. I didn't receive that washer until early in 1916, as I recall it, and some time after that my wife and I were visiting up at Meyersdale again, Mr. Miller asked me if I could sell any washers for him. I told him I would try, I

didn't know if I could or not, and in that way I began to sell washers which were manufactured by him. I continued to sell the type of washer that he made until some time in 1924.

I can identify a cancelled check which has been marked Defendant's Exhibit No. 26 in three prior cases; that is a check that I sent to Mrs. Opel as the final payment on the washer which Mr. Miller promised me for the sum of $45, with instructions for her to pay the $15 to Mr. Miller. That check was made out on or about the date it bears. The signature on the check is mine. (Copy of cancelled check marked Defendant's Deposition Exhibit 26.)

We put the machine which I bought from Mr. Miller in use and my wife of course used it in our own home. We continued to use it there early in 1916 until 1933. Then I
750 had a machine which I had left from the time that I had discontinued my business, that is, the electrical business, I mean, and we used that one; that is, after we discontinued the use of the machine you refer to, the [procelain] tub machine, as it was a newer type machine, and this machine that we had was getting rather aged and noisy, and so forth.

We later disposed of that old machine. A representative of the—I understood of the Brooklyn Edison Company asked me for the machine in exchange for an Easy machine, because he wished to use this in defending a suit brought by The Maytag Company. I made the exchange as he requested. In the machine which I secured from Mr. Miller in 1916, the tub was a cast iron white enameled tub with corrugations on the side and bottom. It stood in a wood frame. The gearing was underneath that tub. It was an oscillating type of machine. I can identify one of the machines in this room as that particular machine. The one in back there (indicating).

Mr. Bristol: The witness refers to the machine which has been marked Defendant's Exhibit 21 [now Defendant's Exhibit 28] in this case.

The Witness: Its condition today is the same as the condition when I received it in 1916 except that it is worn some of course. It has been painted; that is, the wooden frame has been painted. There have been some replacements of parts.

751 At the time that I purchased it it was marked in a way to indicate the trade name and the name of the manufacturer; it was marked with a trade name, "Porcelain

Age," also by the manufacturer, "Manufactured by William S. Miller of Meyersdale, Pa." I have examined the machine, Defendant's Exhibit 21 [now Defendant's Exhibit 28] to determine whether any of that marking can be seen today. Most of it has been washed away or obliterated, but there is some remaining. You can see "Age" and "by" and the last part of "Manufactured" and the last two letters—two of the letters of "Meyersdale." You can see "Pa.", the abbreviation for Pennsylvania, on it.

I had subsequent business dealings with William S. Miller. The first machine that I sold which was manufactured by William Miller I sold in 1917, which was one similar to mine, a corrugated tub, sides and bottom, and I think I sold two more of the same type, that is the same type tub. He then discontinued making that sart of tub and made a smooth tub, and I sold those from 1918 to 1924.

Q28. I show you a sheaf of cancelled checks which have previously been marked Defendant's Exhibit 24, items 1 to 22, in three previous litigations. Can you identify those checks?

A. The one dated June 18, 1918, is a check which I sent to Mr. Miller in payment for the first smooth tub machine which he sent me, and the subsequent, the following,
752 checks were also in payment, up to and including January 14, 1920,—were in payment for similar machines which I received from Mr. Miller.

Q29. There are also other checks. The whole lot is what I am referring to.

A. Well, all except one—all the dealings that I ever had with Mr. Miller pertained to washers or washer parts, so all of the checks that I may have sent him, of course, would represent payment for washers or parts which I received from him.

All of these checks bear my signature. I am acquainted with the handwriting of the endorsement on the back of each of these checks. It is William S. Miller's handwriting.

(Copies of cancelled checks marked Defendant's Deposition Exhibit 24, items 1 to 22.)

The check dated June 18, 1918, is payment for the first smooth tub machine that I obtained from Mr. Miller. That machine was sold to Frank P. Barnhart of Franklin Street, Johnstown; an uncle of mine. I can identify a machine in this room as representative of that machine that I sold to Frank P. Barnhart. It is the one on my right.

Mr. Bristol: The witness refers to Defendant's Deposition Exhibit 22 [now Defendant's Exhibit 19].

The Witness: I know the particular machine Defendant's Deposition Exhibit 22 [now Defendant's Exhibit 19] is a machine which I sold to my brother, Walter Barnhart, whose deposition has been taken today in this case. I sold
753 him that machine in the fall of 1919. I know it was the first year that I moved in the home which I now occupy. I moved there, I think, in August, August or September. It was a month or so after I moved up there until he purchased this machine, and I know that he helped pay for the machine by some work which he did for me at that time. It was some concrete work in the cellar and a walk, too, I believe.

Q41. Can you identify any check in Defendant's Exhibit 24 as relating to that machine?

A. I know it is one of two checks here. I would not be able to say at this time just which one it is.

Q42. What are those two?

A. May 1, 1919, and May 29, 1920.

I can identify a cancelled check which has previously been marked Defendant's Exhibit No. 27 in three previous litigations. It bears my signature. It was issued September 23, 1918.

(Copy of cancelled check marked Defendant's Deposition Exhibit 27.)

The payee of the check which I have just identified is Mrs. Lewis Bacon. This check had connection with the sale of a washing machine. I sold a washer to Mrs. Lewis Bacon. She lived in Baltimore, Maryland. I don't recall the street any more, but the washer was shipped to Mrs. Bacon from Meyersdale by the manufacturer, William S. Miller. Mrs. Bacon paid the freight on the washer upon receipt
754 of the machine, and this check was sent by me to her to refund her for the freight payment which she had made on the washer, which it was customary for me to pay of course. Mrs. Bacon was a sister of Mrs. Frank P. Barnhart, whom I had sold a washer to previously. She was visiting her sister and saw the washer which her sister had and requested her sister to try to get one like it for her. That is how I came to sell her one. That was a smooth tub machine. The check in Exhibit 24, dated June 18, 1918, is the check which I sent to Mr. Miller in payment for the washer which I had sold to Mrs. Frank P. Barnhart. The third check in that group, which bears date September 23, 1918

has the same date as the check to Mrs. Bacon, Exhibit 27. I recall that I wrote both checks on the same date that I refunded her her $2, and sent a check to Mr. Miller on September 23rd for that washer. I sold approximately 35 Miller machines, I think, of both types. I think about three of the corrugated tub and the balance the smooth tubs. To the best of my knowledge it was around 35 machines.

I can name some of the people who purchased these machines from me. Mrs. Frank P. Barnhart was one. Mrs. Lewis Bacon was another. Mrs. Heller, I don't recall her first name, of Hazleton, Pa., was one. Mrs. Weaver, who resided on Franklin Street, Johnstown, at that time was another. Mrs. Croft, who resided on Saylor Street in Johnstown was another. Mr. Harold Shoemaker and Mr.
755 Gilbert Shoemaker, residing on Vickroy Avenue, Ferndale, Johnstown. There were others, too, but I just can't recall them at this time. Mr. Walter Barnhart, too, of course. In 1934, in the spring of 1934, I visited practically all of the people in Johnstown who had bought this type of washer from me, and the machines were all in operation at that time.

I know firsthand about the manufacture of these machines by William S. Miller. My wife and I used to go to Meyersdale quite frequently, because that was her home town, and any time that I was up there, I always went to see Mr. Miller. He manufactured the washers in the rear of his home, he had a shop, and we of course discussed changes which he was making in the machine, and he was usually doing that. I saw him on different occasions assembling his washers there in his shop in the rear of his home.

Q61. Do you know whether he did any part of the manufacture in the factory of the Miller Manufacturing Compan, at Meyersdale?

A. Nothing except what he told me. I never saw it. He told me he did. That is all I know.

I made demonstrations of the machines in connection with my selling of them. That includes both the corrugated tub machine as well as the smooth tub machine. Every one that I had sold them to were well pleased, or so they told me, and they evidently were or they would not have told me so.

I observed no difference whatever in the washing ac-
756 tion as it was carried out in the smooth tub machine by comparison with the washing action in the corrugated tub machine.

I stopped selling these machines in 1924, because Mr. Miller discontinued the manufacture of them.

I am acquainted with the factors which brought him to discontinue the manufacture. He asked me if I couldn't help finance or to get someone to help finance the construction of these machines, and I don't recall any more whether I couldn't or just what the circumstances were in regard to that, but I know that I didn't get any financial help for him, and for that reason he discontinued the manufacture of the machines. Mr. Miller is now in his eighties; I don't know. Eighty some odd years old. I don't know just how old.

Of course dependent upon the kind of clothes you were washing, how dirty or how clean they might be, the ordinary length of time required to wash a load of clothes in one of these Miller machines, would range from 10 to 15 minutes with the proper water and soap and so forth that were necessary.

Cross-Examination.

By Mr. Jeffery:

To the best of my knowledge I sold all of the smooth tub machines that Mr. Miller manufactured; that was about 32. I don't know how many of the corrugated tub machines he sold like Defendant's Exhibit 21 [now Defendant's Exhibit 28]. I sold two or three, and I know that he sold some himself. I know of two that he sold that I saw in
757 homes in Meyersdale. It was a limited number, limited by his finances.

I have seen one of the machines of the Miller Manufacturing Company known as Model J. I don't remember whether the picture of the agitator which appears on one page of the circular of the Miller Manufacturing Company marked in evidence here as Plaintiff's Cross Exhibit No. 9 correctly represents the agitator on those Model J machines which I saw. I remember the ribs on the agitators on the Model J machine. To the best of my knowledge the ribs on the Model J were slightly smaller than the ribs on the machine made by Mr. Miller, to the best of my recollection, and also they contained six ribs where Mr. Miller's contained four. I sold some of those Model J machines of the Miller Manufacturing Company.

XQ82. Is the shape of the cleats on Defendant's Exhibit 22 [now Defendant's Exhibit 19] agitator substantially
758 the same as the shape of the cleats in the Model J machine, as you recall them?

A. To the best of my recollection they are, yes. The metal plate on top of the agitators of Exhibits 21 and 22 is to reduce the wear of the agitator, which is made of wood, and also to give it a little additional weight; to weight the agitator down. With the machine in operation the agitator had a tendency to work up, as it met no resistance going up, which it did down, and for that reason of course he had to have weight to keep it down.

XQ85. They wanted to keep it down on the clothes?

A. Surely, the clothes in the water.

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759 CHARLES F. JENKINS, a witness for the defendant.

Testimony by deposition taken at Meyersdale, Pennsylvania, November 4, 1937.

Direct Examination.

By Mr. Bristol:

I reside at 355 Main Street, Meyersdale, Pennsylvania. I have resided there since November 1, 1922. Prior to that time, I resided at a number of places. At the time I had charge of the Miller Manufacturing Company, I was living on Meyers Avenue but I don't know the number of the house now.

I am the same Charles F. Jenkins whose deposition was taken at Johnstown, Pa., in April, 1934, in the case of the Maytag Company against the Brooklyn Edison Company.

I was connected with the Miller Manufacturing Company of Meyersdale from November 1, 1916 to November 1, 1919. I was General Manager of that Company—well, in fact, almost everything.

I am acquainted with Mr. William S. Miller. I see him in this room.

During the period while I was General Manager of the Miller Manufacturing Company, I knew of activities of Mr. W. S. Miller in connection with washing machines. At that time Mr. Miller was not associated with this company in any other capacity than a stockholder; however, he did make use of our machinery and tools to make parts to complete the washing machine that he was working on at that time. The machine that he made at that time was the gearing that he was interested in. At that time, he, already, was making use of a smooth tub and the part that he was completing at the place was a new gearing.

760

Before he used a smooth tub he had used a wooden tub with corrugation on the sides and bottom. I know of his using a

cast iron porcelain enamel tub. I have seen them. I don't recall that he used more than one cast iron porcelain enamel tub. If he did, I didn't see the second one. The cast iron tub that I recall had corrugations on the side wall, on the inside of the tub.

I personally saw Mr. Miller assemble these machines in the Miller Manufacturing building, in the period of 1916 and 1919—between that time.

I have examined a photostat of a drawing which has been marked Exhibit 137 in some other cases. I would say it is a duplicate of the machines which I saw Mr. Miller assemble. In other words, I would say it is a facsimile of the machine he produced.

(Photostat drawing marked Defendant's Deposition Exhibit 137)

Q22. Mr. Jenkins, did you also see Mr. Miller assembling a machine using a cast iron tub which did not have corrugations in the sides?

A. Right off-hand I could not recall.

I have seen machines which Mr. Miller assembled at this time in operation. The first one I saw in his own base-
761 ment. I have not seen that same machine recently.

It was the disc or as Mr. Miller described it an agitator which did the washing in that machine. That agitator would slide over a stem in the tub and also operated by electric power. The agitator had a motion forward and reverse a little less than one-half of a circle.

I saw that machine in Mr. Miller's basement, I would say, in 1917 or 1918.

Cross-Examination.

By Mr. Mason:

In my duties as General Manager of Miller Manufacturing Company from Nov. 1, 1916 to Nov. 1, 1919 I was in charge of everything and knew all the details of the business. That line of details included the advertising that they put out.

I recognize an advertising pamphlet that was introduced in the case of the Maytag Company vs. Brooklyn Edison Company as plaintiff's Cross Exhibit No. 3 which is the original of the photostatic copy introduced in the present case as Plaintiff's Cross Deposition Exhibit No. 9 [Now Plaintiff's Exhibit 21]. I was the one in charge in preparing and putting out that circular. The heading on this circular reads "The Home Model" "Model J" and the circular bears the name Miller

Manufacturing Company and also bears the name C. F. Jenkins, manager. I am that same Mr. Jenkins referred to in the circular. The J in the Model "J" distinguished it from the other models we were making at that time. J was
762 taken from the first letter of my name. I was, at that time, thoroughly familiar with the machine shown and described in this circular.

XQ37. If you will, please, look at that side of that circular which shows the disc or agitator at the lower right-hand corner of this machine, I assume that was the disc or agitator that was in the machine? A. It is.

XQ38. How was that disc or agitator mounted in the tub?
A. There was a slot in the disc or agitator.

When I say slot I mean that hole in the center of the disc and there were two guide slots on each side. The purpose of these guide slots was so that they would slide over two extensions on the stem so that it would hold it so that it would carry the clothes forward and in reverse. This disc or agitator did not slide vertically in the tub; I would say horizontally.

XQ42. How would that be applied on the shaft?
A. It would slide up and down. It would depend on the amount of clothing in the tub.

XQ43. So that the weight of the agitator was on the clothes? A. It was on the clothes.

763 I would say that this circular that we are talking about now, clearly shows and describes this particular machine and its operation.

Mr. Miller did not take out any patent on this particular machine.

XQ46. Did he take out any patent?
A. I wouldn't say he did. I wasn't there at that time but I have seen evidence where he has made application for it.

You show me a patent numbered 738560 issued to William S. Miller of Meyersdale, Pa., which is Plaintiff's Cross Deposition Exhibit 10 [now Plaintiff's Exhibit 22] in this case. That is the same Mr. Miller who is in the room now and is going to testify in this case.

XQ48. On Page 1 of the specifications of this patent, line 59 it states that the journal for the agitator shaft is "somewhat longer than the bearing in order that it shall be capable of a certain amount of vertical or up and down adjustment while in operation in order to accommodate itself easily to the

quantity of the articles being washed and also to the inequalities of thickness thereof, which arise constantly from their change of position." Is this the same general up and down movement that you referred to in connection with the circular you just testified about as to the disc or agitator move-
764 ment up and down to accommodate the amount of clothes in the tub? A. It is.

XQ49. Also on Page 1 of the specifications beginning at line 73 and referring to the ribs it states that these ribs have their sides inclined to facilitate the rubbing action of the ribs, and again in line 100 at the bottom of the page 1 it states "the rubbing is effected by the action of the side and bottom ribs of the agitator in conjunction with the side and bottom ribs of the tub and this rubbing in connection with the rush of the water as the agitator is turned within the tub and the squeezing action effected by the up and down movement of the agitator is designed to cleanse the articles in the tub in a satisfactory manner." This squeezing of the clothes between the bottom of the agitator and the bottom of the tub is the same action that you referred to in connection with the circular when you said that the weight was on the clothes and the agitator would move up and down to accommodate the clothes, was it not? A. Yes.

I do not know how many machines shown and described in the circular that I referred to before I referred to the patent were sold. I would say that circular was put out in 1918 or 1919. The Miller Manufacturing Company did not put out any metal machines while I was manager at that time.

XQ53. I believe you said that Mr. Miller personally
765 made some washing machines with metal tubs with corrugated sides sometime between 1916 and 1919?
A. I did.

I saw some of these machines washing clothes. The action of the disc or agitator was that it would slide up or down on the shaft. This agitator or disc would adjust itself to the amount of clothes in the tub. The weight of the agitator was on the clothes and the ribs on the agitator would penetrate the mass of clothes. And as the agitator was oscillating back and forth it would carry the mass of clothes back and forth in the tub.

XQ60. And this tub had corrugated side walls?
A. Which one?
XQ61. I am referring to the photostat Defendant's Deposition Exhibit 137. A. It was.

XQ62. So that washing action in general was the same in this machine as it was in the machine shown in the
766 Home Model circular Plaintiff's Cross Deposition Exhibit 9 and in the Miller patent 738560 Plaintiff's Cross Deposition Exhibit 10 [now Plaintiff's Exhibits 21 and 22].

A. It was the same action.

XQ63. And in the machine of Defendant's Deposition Exhibit 137 which you say is the same machine as you saw Mr. Miller make and assemble, the clothes would be dragged around back and forth in the tub by the ribs under the face of the agitator, would they not? A. They would.

XQ64. So that the clothes would move around in the tub as a mass back and forth during the washing operation?

A. Yes, they would.

I do not know how many of these corrugated tubs that we are talking about now, that Mr. Miller made. I do not know when he quit making them. He did not go into large production, not to my knowledge. In other words, I mean that he made just a few.

XQ69. Did I understand you to say that Mr. Miller, in so far as you knew at that time, was not making a washing machine with a tub which was smooth on the inside between 1916 and 1919? A. I did not say that.

767 XQ70. Then, I understand you to say that he did make a smooth walled tub machine?

A. He did. I saw him making them.

XQ71. And in these smooth walled tub machines that Mr. Miller made at that time, was the construction of the machine the same as the construction of the machine shown in Defendant's Deposition Exhibit 137, except, that the tub was smooth on the inside instead of corrugated?

A. Yes, they were the same.

XQ72. And was the washing operation in the second machine the same? A. What do you mean, the gearing?

XQ73. I mean did the weight of the agitator rest on the clothes and were the clothes moved back and forth as a mass inside of the tub by the ribs on the under face of the agitator as you said they were in the corrugated tub?

A. The same action.

Redirect Examination.

By Mr. Bristol:

RDQ74. I show you a photostatic copy of a drawing marked Defendant's Exhibit 138 and ask you how that drawing compares with the tub and agitator of Mr. Miller's smooth tub machines as you knew them?

A. I would say that it was an exact facsimile of that one.

(Photostat of drawing marked Defendant's Deposition Exhibit 138.)

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768 WILLIAM S. MILLER, a witness for the defendant. Testimony by deposition taken at Meyersdale, Pennsylvania, November 4, 1937.

Direct Examination.

By Mr. Bristol:

I reside in Meyersdale, Pa. I have resided there not far from fifty years. If I live until the 17th of December, I will be 83.

I was connected with the Miller Manufacturing Company of Meyersdale. I formed the company. I built the factory. I couldn't recall when my active connection with the company ceased.

I have individually, on my own account, manufactured washing machines.

I am familiar with design patent No. 53745 a copy of which has been marked Defendant's Deposition Exhibit 25 in this case. I am the W. S. Miller who is named as the patentee of that patent. That design represents a cast iron porcelain enamel tub. That has something to do with my personal manufacture of washing machines.

As to my manufacture of washing machines, the first one, maybe a few of them, I don't just remember, I made them up in the factory. That design patent represents the design of the tub truly, I believe.

A drawing which has been marked Defendant's Deposition Exhibit 137 in this case is a true drawing of the washing machines which I manufactured myself.

769 I had a name for this machine; "Porcelain Age", I believe I called it. That name was applied to the machines that I made by a stencil on the machine.

I built these first machines in the factory of the Miller Manufacturing Company.

I am acquainted with Mr. John N. Lint.

Q21. Where was Mr. Lint working at the time you built these machines like Exhibit 137.

A. That is so long ago—he always worked under that roof.

Q22. About how many machines did you build with this porcelain corrugated tub.

A. Not many, just don't know how many, but there was something that turned me.

I recognize a check dated May 15, 1916 which has been marked Defendant's Exhibit 23 in three other suits. That check was made out to myself. On the back, that is my signature in my own hand writing. That check was given for one of these washing machines; one of these corrugated tub machines that I made.

(Check marked Defendant's Deposition Exhibit 23)

I still have one of those machines in my own home. I couldn't give the year that machine was made but it was one of the very first machines that I made. The machine is still in operating condition. In that machine the agitator runs at fifty-six; fifty-six oscillations per minute. I
770 mean complete oscillations about half way back and forth.

At a later time, I used a plain tub, as I call it, without corrugations at the sides. A copy of a drawing which has been marked Defendant's Deposition Exhibit 138 is a true comparison of the plain tub machine which I made. I mean it is a true representation of the tub and agitator as I made it.

I gave a trade name to this second type of machine. The name was "Seamless Tub". That was lettered on, stenciled on the machine.

These machines washed well. There was no difference in the action of the second machines so far as the quality of washing was concerned. The absence of the corrugations made no difference that I ever experienced. I had the corrugations in the walls of the first tub that I used because the women were used to rubbing on a wash board and they were looking for something like that; not that I believed it was essential.

I don't know about how many of the machines with the plain or smooth tub I made.

I sold these machines that I made myself, around here and Harry E. Barnhart in Johnstown sold such machines for me.

I can identify checks which have been marked Defendant's Exhibits 24, items 1 to 22 in three previous suits and in this suit. The signature on the backs of these checks is my own. These checks were given to me for washing machines. I got

the money on each of these checks. I never had any other dealings with Mr. Barnhart, except in connection with
771 washing machines such as are illustrated in Exhibits 137 and 138.

Q52. Did you know anything about a washing machine with a submerged agitator which Mr. John N. Lint built at some later time?

Q53. Please tell us briefly what you know about Mr. Lint's work on such a machine?

A. Well, he built some that had a copper tub and some had an aluminum tub. The aluminum tub was made over this same pattern.

Mr. Bristol: The witness refers to Exhibit 138.

The Witness: Mr. Lint's agitator was located at the bottom under the clothes. The agitator in Mr. Lint's machine was driven by an upright shaft with a square to drive the agitator to hold it to give it the motion.

Mr. Lint's agitator was a disc with a shaft in the center like a cone, you would call it, and four blades connected to that run out to the edge of the disc. It was made out of aluminum.

Q58. I show you an agitator disc and ask you how that compares with the one that you have just described?

A. It is just like it, exactly like it.

(Agitator disc marked Defendant's Deposition Exhibit C).

772 Mr. Mason: The exhibit is objected to as not being sufficiently proved and no sufficient foundation laid, therefor. [Objected to at the trial and objection sustained.]

Q60. Mr. Miller, have you any distinct recollection of seeing Mr. Lint working on a washing machine with an agitator disc like Exhibit C? A. No.

Q61. Is there any circumstance that you recollect in connection with such a machine made by Mr. Lint?

A. I saw him work at those machines.

Q62. Had you ever seen the Maytag submerged agitator machine before that time?

A. I couldn't say whether it was before.

Q63. Tell us what you did when you first saw that other make of washing machines with a submerged agitator.

A. I saw one.

Q64. And what did you do then.

A. I don't know what I did.

Q65. When you first saw one of those Maytag machines was it before or after that you had seen Mr. Lint work on a machine like Exhibit C? A. I don't know.

Cross-Examination.

By Mr. Mason:

I remember Plaintiff's Cross Deposition Exhibit 10 [now Plaintiff's Exhibit 22] which is a copy of my patent 738560. That patent was issued to me. That machine has an
773 agitator that moves up and down vertically in the tub and it has ribs around the inside of the tub, ribs across the bottom of the tub, and ribs on the under face of the agitator.

XQ72. And in washing clothes with your machine the agitator, all the weight of the agitator, will press on the clothes in the tub? A. Yes.

XQ73. And as the agitator oscillates back and forth it would squeeze the clothes between the agitator and the bottom of the tub? A. Yes.

XQ74. And it drags the clothes back and forth in the tub to clean them? A. Yes.

The general shape of the ribs on the bottom of the agitator is similar to the shape of the ribs on the Porcelain Age machine and the Seamless Tub machines shown in the Defendant's Exhibits 137 and 138.

Referring to Defendant's Exhibits 137 and 138 which are the drawings that I have in my hand, the agitator in each of these machines was movable up and down on the shaft that oscillated it.

XQ77. And the weight of the agitator would rest on the clothes in the tub? A. Yes.

774 XQ78. About how high were the ribs on the agitator of these machines. Mr. Miller, weren't they originally around two inches high?

A. Yes, I made them out of two inch plank. It made them about 2 inches high.

XQ79. Or maybe 1⅝"?

A. Maybe, they were worn pretty bad.

XQ80. So that your answer is that they were around 1⅝" or perhaps, a little more or less? A. Yes.

XQ81. And these ribs on the under face of the agitator, Mr. Miller, would press down on the clothes, would they not?

A. Yes.

XQ82. And as you would oscillate the agitator back and forth, these ribs would carry the clothes in a mass back and forth in the tub?

A. That agitated—that moved the clothes.

XQ83. These ribs pressed down on the clothes would swish and carry them back and forth in the tub?

A. Yes.

XQ84. And rub the mass of clothes as these ribs would move back and forth in the tub?

A. There is evidently some friction, there. They were put there to move the clothes. You have to get some
775 action there or you can't wash. That is the only reason they were put there.

XQ85. And this friction you speak of is between the ribs and the clothes?

A. Yes, the two coming in contact with each other.

XQ86. And the weight of the agitator rests on the clothes?

A. Yes.

XQ87. So that the clothes move back and forth as a mass in the tub when the agitator would oscillate?

A. I was never in the tub to see it, myself, I was going to say there is action in it whether there is any corrugation in the tub or not. (The witness illustrates by moving one hand over the other hand with a handkerchief between.)

XQ88. Yes, then, I see, what you mean, Mr. Miller. You mean that the clothes were swished back and forth in tub by the ribs on these agitators? A. Yes.

I don't know how many machines I made having the corrugated tub. I have no record. I would say it was not many. I can say it was about a half dozen.

XQ92. The washing action you have just described, about the clothes swishing in the water between the ribs of the agitator was the same in the both kinds of tubs, the smooth and corrugated, was it not? A. Yes.

776 These cast iron porcelain tubs weighed somewhere over a hundred pounds but I don't know just how much more.

XQ94. You referred to the machine that you have in your house now as running 56 oscillations per minute. I assume you have increased the speed some since when you first made them?

A. I don't recall the exact speed when I was making them.

I have changed the gearing since when I first made these machines.

Referring to the original of Plaintiff's Cross Deposition Exhibit 9 [now Plaintiff's Exhibit 21], this being a photostatic copy of an original circular which was introduced in the case of the Maytag Company vs. Brooklyn Edison Company as Plaintiff Cross Exhibit No. 3; I know what that is and I have seen one like it before. I was familiar with this machine shown in that circular. That is a correct showing of the agitator that was used in that machine.

777 That circular correctly shows and describes that machine.

XQ100. In that machine the ribs on the under face of the agitator would grab the clothes and swish the clothes as the agitator would oscillate back and forth in the tub? A. Yes.

XQ101. And that was also true of the agitator in your cast iron porcelain machine meaning that the ribs on the agitator would grab the clothes and swish them back and forth in the water? A. Yes.

XQ102. Is it true, Mr. Miller, that the main reason that you changed from the corrugated tub to the smooth tub was that either you or the foundry had some trouble with the pattern of the tub with corrugations in the tub.

A. No, the reason why I changed the pattern, the corrugations at the turn up here formed a sort of a knuckle, (Witness points to the top of the tub in Exhibit 137) (continuing) making a short turn. The enamel came off of one of them and exposed the iron; that was the reason why I made the change and spent a hundred dollars to make the change.

I concluded that the tub without the corrugations would not have the porcelain chipped off so easily.

778 I discontinued making and selling these cast iron porcelain tubs quite a while ago.

In the operation of these machines having the cast iron porcelain tubs, it was necessary to lift out the disc or agitator when you put in the clothes.

XQ106. And then after you put in the clothes, you put the disc or agitator back on the shaft so that its weight rested down on the clothes again, did you not? A. Yes.

XQ107. And the agitator by its up and down movement on the shaft would adjust itself to the amount of clothes in the tub? A. Yes.

XQ108. And this pressing down of the agitator on the clothes would compress the clothes between the agitator and the bottom of the clothes?

A. Yes, it would have to go around sufficiently to give the proper action.

XQ109. When you loaded the tub with clothes you would put in a big bunch of clothes in the tub would you not?

A. That depended. I would say a reasonable amount of clothes.

XQ110. Do you know how many pounds would be a reasonable amount in that machine?

779 A. I never weighed the clothes before they were put in.

XQ111. But it would be a pretty good amount of clothes would it not? A. Yes.

XQ112. In other words, you would wash as many clothes as you could at one washing? A. Yes.

I don't know how many smooth tubs I made and sold. It was more than one-half dozen; I would guess it was as many as twenty-five. I don't remember when I quit making those smooth tubs. It was a good while ago.

I first started to make washing machines, that is the old ones, 45 years ago. The first type of machine I made was one having a forked shaft, one having three long prongs in the tub to work the clothes back and forth.

In Defendant's Deposition Exhibit 137 and Defendant's Deposition 138, that is a metal plate on the center of the top part of the agitator. That would sort of tend to weigh the agitator down. Had some weight but it wasn't intended for weight. It was to give bearing on the drive wings. I would say that that plate of metal would weigh maybe two pounds—hardly.

I had manufactured machines operated by hand motion, in which there was a disc with corrugations on the bottom before I made these cast iron porcelain tubs.

780 XQ126. I show you Defendant's Exhibits Nos. 137 and 138, two photostatic drawings of your cast iron porcelain machines and ask you if these photostatic plates show corrugations in the bottom of both of these tubs?

A. Yes.

Redirect Examination.

By Mr. Bristol:

RDQ127. As to the particular machine which you have in your own home here in Meyersdale, have you made any changes in the gearing since you originally built that machine? A. Yes.

RDQ128. On that particular machine?

A. You mean on that corrugated machine?

RDQ129. I mean on that particular machine since you built it?

A. I changed type. I had three different gearings on those machines.

RDQ130. Which gearing is on the machine that you have in your home today? A. The first.

RDQ131. And is that gearing today different from the gearing that was on that particular machine when you built it? A. No, that is the first gearing I ever built.

RDQ132. So you have not changed that particular gearing on that particular machine at all?

A. No, I didn't change that.

781 RDQ133. Then, do I understand that the changes of gearing which you have made were on the other machines? A. Yes.

Recross Examination.

By Mr. Mason:

XQ134. Did you talk to anyone about your testimony you are giving here today before you testified?

Mr. Bristol: We had a talk together this morning.

XQ135. And who did you talk to?

A. Mr. Bristol.

(Counsel for defendant then offered additional deposition of Mr. Lint, and the deposition was received subject to the objection of Mr. Lane).

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782 JOHN N. LINT, a witness for the defendant. Testimony by deposition taken at Meyersdale, Pennsylvania, November 4, 1937.

Direct Examination.

By Mr. Bristol:

I am the same John N. Lint whose testimony was taken in New York on Friday October 29, 1937, in this case.

I can identify a metal agitator which has already been marked Defendant's Deposition Exhibit C. It is the disc used in a washing machine designed by me and completed about December 1922. This machine incorporated a smooth cast aluminum tub with this disc operating at the bottom of the tub.

I have produced this disc at your request. I got it this morning at the plant of the Miller Manufacturing Company. The condition now compares favorably with its condition when it was first made. It is still usable. When my deposition was taken in New York, I made, at your request, a sketch

which was marked Defendant's Deposition Exhibit B. The sketch is intended to depict this particular disc, Exhibit C.

The Miller Manufacturing Company built machines such as I have described today. They were built from about 1923 until 1928.

The diameter of the tub of those machines was 23½ inches approximately. The agitator disc Exhibit C oscillated at 42 to 44 per minute as a maximum.

783 The agitator Exhibit C was cast about October or November 1922.

I first saw a Maytag subm erged agitator washing machine in 1923. I had never seen a dvertising of such a Maytag washing machine before De ber 1922. In my work on this machine, I did not borrow any inspiration from the Maytag machine. It was original with me.

Mr. Mason: No Cross-Examination.

784 (Defendant's Exhibit 19, a Miller smooth tub machine, received in evidence).

(Defendant's Exhibit 20, a 1900 Form 3 machine, received in evidence).

Rebuttal.

(Thereupon the plaintiff, to sustain the issues on its part, offered and introduced the following evidence, oral and documentary, in rebuttal, to-wit:)

785 George L. Miller, of lawful age, being produced, sworn and examined as a witness on behalf of the plaintiff, in rebuttal, testified as follows:

Direct Examination.

By Mr. Loftus:

My full name is George Louis Miller. I reside at Newton, Iowa. I work for the Maytag Company. I work in the machine shop, the pattern shop, just at present. I started to work for the Band Cutter & Self-Feeder Company in 1903 which is the Maytag Company at the present time. I was working for the Maytag Company or its predecessor, continuously up until August 1st, 1919. Then I left there on account of my health and was away about four months. I was at Denver, Colorado. I reentered the employment of the Maytag Company at Newton, Iowa on December 1, 1919.

As to the character of my work during the several years immediately preceding my leaving in 1919, well, the first seven years I was there I was an expert out on the road for agricultural machinery, and after that I was in the experimental department most of the time. Prior to going to Denver I was in the experimental department from about 1910 to 1919, somewhere along there. During that time I was working under Mr. Howard Snyder.

786 I was working on washing machines principally.

The Maytag Company was making and selling commercially the wood tub machine prior to my going to Denver. We called that a dolly machine. Wooden peg dolly.

After I returned from Denver I reentered the experimental department under Mr. Howard Snyder on May 13, 1920. On the day I returned Mr. Snyder asked me to build up a machine with an agitator in the bottom and driven from the bottom. I built up a wooden machine and used a wood tub and I had a power leg of an aluminum machine which was Model 70. I used this power leg to make the driving mechanism and attached it to this wood tub. With that mechanism I drove the agitator in this wooden tub, in the bottom of the tub. The part I term the agitator in the bottom of the tub which was driven by this mechanism was a disk about fifteen inches in diameter; that is it was cut sixteen inches and turned down, flanged down half an inch; it was fifteen inches in diameter and it had three paddles on it but it was arranged for six, had holes in it for six paddles. I used a wooden tub in that model. I operated that machine after I completed it. It was driven from the bottom and this agitator caused what you might call a rolling motion, the water would go out and come back to the center, and so on and so forth.

I don't imagine it took over fifteen hours to put that machine together or construct it after Mr. Snyder requested me to do that work.

After I completed it and it was in running order I took it to Mrs. Ellingsworth's in Newton, Iowa. She did a lot
787 of our experimental work. That is, the washing of clothes. We took it out there and instructed her how to use it. I saw it operated there.

It was driven by an electric motor and I instructed her to put in clothes a piece at a time after the water was in and the agitator was in motion, not to overload it, so that the clothes would have a generally rolling motion. When you put the

clothes in if you got too many in it would destroy this rolling motion up to a certain point.

Q. How did it roll; you say it was a rolling motion?
A. It would go out from the center and come back to the center.

I couldn't give the exact time it was operated at Mrs. Ellingsworth's home. It was operated quite a while. It must have been there the biggest part of the—from May until when it was cold weather. That was in 1920. I saw it out there on more than one occasion, myself, a dozen or more times.

Q. How many times did you see it operating there?
A. When I went there it was in operation.

Mrs. Ellingsworth at that time did general washings for the public; family washings for hire. The machine was used for that purpose while she had it. I observed anything from grimy, dirty overalls to silks and stuff like that being washed in that particular machine on my different visits there.

Mr. Howard Snyder was out there with me on some occasions. He was at the head of the experimental department and it was his business to see how it was operated, how
788 it was operating, and that work I was doing under the direction and supervision of Mr. Howard Snyder.

The tub for making up this machine was a tub that was in our production at that time. That machine was known as Model 41 and 42. The power leg was from the Model 70.

Q. Who made the member that was mounted on the inside of the tub near the bottom, to which you have referred as an agitator?
A. A fellow by the name of Joe Stephen had charge of the department.

I directed that particular device made. I told him what I wanted and he made it. He was employed at that time by the Maytag Company in Newton, Iowa.

I personally took that machine out to Mrs. Ellingsworth's from the Maytag plant. I brought it back. I brought it back more than once. The occasion for bringing it back the first time was that the rack bar broke. The rack bar is the bar that went from the power leg over to the agitator that caused it to agitate.

I was requested to rebuild that machine, I believe it was in 1935. I did so. It is in the court room now. I am now referring to Plaintiff's Exhibit 8; that is the machine I rebuilt. I rebuilt that particular one in 1935.

Q. Just tell us briefly, Mr. Miller, what you did in rebuilding as to the parts you used and how they correspond with the parts you used in the original model?

789 A. The bearing underneath there was part of our 41 and 42, the casting for it, but of course it was cut some and the arrangement made in a little different shape.

The power leg was in the 70; the disk was made in the blacksmith shop again and put back in there.

Q. How does Plaintiff's Exhibit 8 correspond with the machine you built in 1920 in all respects?

A. It corresponds.

Q. How does it correspond?

A. It is just as it was then as nearly as possible to be made so.

Q. Going back to this machine you had at Mrs. Ellingsworth's in 1920, can you tell us at what speed the machine was operated, and when I say speed I have reference to the oscillations of the member in the tub?

A. Why, we ran it at different speeds from 52 to 58.

On that machine at that time during those operations at Mrs. Ellingsworth's, the disk was fifteen inches and the blades were one and a half by about five and a half inches, approximately, one and a half inches high. We tried it a little with six, but we didn't use that. We just used three. We tried it with six for probably ten minutes. Then we removed three of them.

Q. Now, as the result of the operating of this 1920 machine at Mrs. Ellingsworth's and observing its operation and results, what next did you do under Mr. Snyder's direction with the building of a machine or machines operating in that way?

A. I took a Model 70 and changed it to an under-drive with a propeller in the bottom, and that eventually was the Model 80 as it went on the market.

Q. Tell us about that, Mr. Miller, just how you went about that, how you made it?

790 A. I used practically the same casting as I did on the wood tub, only with an aluminum tub.

Q. What did you do to the aluminum tub first?

A. I planed it off and cut a hole in it and put a plate in there large enough to put the bearing and shaft for the oscillator in.

Q. Then what?

A. I put the rack bar under it and finished it up for an under-drive machine.

Q. Did you put anything inside of it?

A. The agitator, yes, sir.
Q. What was that like?
A. That was an aluminum casting, and this one, I think, had four blades.
Q. That was a casting, you say?
A. Yes.

I did that work in 1921. That must have been in the forepart of the year or the middle of the year. I did that work under Howard Snyder's direction. After I completed that machine, I took that out to Mrs. Ellingsworth's also. I took that out under Mr. Snyder's direction. After I got it out there I instructed her how to use it and left it there. That machine operated very well.

Q. Just go on and tell us generally to what extent you saw it operate at Mrs. Ellingsworth's?
A. Well, washing clothes from dirty ones to fine clothes.
Q. What instructions did you give her as to operation?
A. Well, not to overload it, but always put enough clothes in so they would have free agitation and not to
791 overload it.
Q. I think you testified you observed that machine in operation on several occasions?
A. Yes, sir.
Q. Tell us just how it operated as to the action on the clothes, as to its washing action?
A. The action of the water washed the clothes.
Q. What did it do to the water and clothes?
A. It throwed it out and up and down the center, just continued rolling the clothes through the water.
Q. Now, what did you observe in the operation of this machine in 1920 and also the later one in 1921 of Mrs. Ellingsworth, as to the time of washing and as to the results?
A. Well, the time of washing was half of what the old dolly type would do, at least.
Q. In the second machine with the cast impeller, what kind of clothes were washed in that machine?
A. The same as in the other machine; from very dirty clothes to silks.

The second machine that was operated at Mrs. Ellingsworth's in 1921 that I just described, with the aluminum tub, was brought back to the factory and it has been there, to my knowledge, all the time since.

Q. Would you examine the machines in the court room and see if you can find that machine here?

Mr. Loftus: The witness refers to the machine offered in evidence as Plaintiff's Exhibit 8 A.

Q. I wish you would look at that machine, Mr. Miller,
792 and tell us whether or not you recognize your own hand work on it and if so what?

A. Everything is as it was then as far as I can see, it is the same machine.

Q. You spoke about taking the aluminum tub from the Model 70 and cutting it open in the bottom and securing a plate. Will you examine that machine and point out to the Court where that work was done?

A. Yes.

Q. Just go ahead, Mr. Miller, and tell us what you did to that tub to put it in shape for use; what parts you added to it and point them out?

A. This tub in the first place was all cast with a small hole in the center in the bottom and that hole was enlarged large enough to support this bearing and the rack. Those holes were made through the top, and tapped in the plate below, wherever they may be.

I recognize that as my own work. The part I refer to as the power leg, that is this here. This is a Model 70, so this was made for this machine with the exception it drove from the outside; from the top, 70 did. 70 drove from a connecting rod over a shaft that was on a bearing and came out through here and then up in the center (indicating). When I say it came up here I mean along the side of the tub.

Q. Look at the bottom of that and point out to the Court the parts where you actually did work, if any?

A. This bracket came from the wooden tub for the bearing support.

Q. You mean the bearing supporting the bracket?

A. Yes, sir.

793 Q. And where did you say you obtained that?

A. That was part of the 41 and 42 Models.

Q. And how was that bracket secured?

A. With bolts.

Q. To what?

A. To the plate through the top.

Q. Where did you obtain the plate?

A. I made that out of a piece of aluminum,—steel.

Q. And that is all your own work?

A. Yes, sir.

The lever mechanism on the side of the tub is the control to throw it in and out of gear. I am referring now to the lever with the tag on. I made that from just a piece of steel bar,

plate. I did this work of making the bracket, and the control lever. I don't remember where I got the motor; it was the stock motor. That work was done under the direction of Howard Snyder.

Q. How does the impeller that is on the side of the tub correspond with the impeller used when this machine was operated at Mrs. Ellingsworth's?

A. Just the same as far as I know.

Q. Now, you have told us that you had observed the operation in 1921, the machine a replica of which is here as Plaintiff's Exhibit 8 and also the later machine in 1921 which is here as Plaintiff's Exhibit 8 A. Who else was with you at the time when you made some of these visits? You stated that Mr. Snyder was with you?

A. F. L. Maytag was one that I remember of.

794 Q. Senator Maytag?

A. Senator Maytag.

Q. And when was that, about?

A. I would say it was about October, 1921; somewhere along about that time. I testified in the Brooklyn Edison case. When I was on the stand I was asked to make a sketch of the 1920 machines so far as the tub and impeller was concerned. I believe I made the sketch.

(Sketch marked Plaintiff's Exhibit 23 for identification).

Q. I call your attention to Plaintiff's Exhibit 23 and ask you to look at it and see if you know what it shows and what it represents, the origin of it?

A. Yes, I think that is about the kind of a drawing I would make.

Q. At that time? A. Yes.

Q. While you were on the witness stand?

A. Yes, sir.

It is not intended to be a working drawing or a finished drawing. It was a pencil sketch. It was made to show the original machine, the wooden tub with the agitator at the bottom. The one I have been talking about made in 1920.

(Plaintiff's Exhibit 23, a sketch, received in evidence).

795 Cross-Examination.

By Mr. Bristol:

When Mr. Loftus was asking me about this aluminum tub machine, Plaintiff's Exhibit 8 A, the agitator was not in place at that time. It is in place now. As far as I can see this machine is identical with the machne which I took out to Mrs. Ellingsworth's. If there is anything there that is any dif-

ferent it has been made off of the same pattern. That applies to the agitator. That lid on the machine is the same lid that was on there originally.

Q. Are those pulleys around which the belt runs the same pulleys that it had on it when you took it out there?

A. This one is but this one I would say is not. The worm shaft pulley is the same, the motor pulley I would not swear.

The rack bar is the same. This aluminum plate which is fastened to the under side of the tub is the same. The clutch operating lever is the same.

About the motor, I couldn't say; it might be the same or it might not. I never made any change in the motor on the machine that I took out to Mrs. Ellingsworth's that I know of.

I never made any change in the agitator of the machine that I took out to Mrs. Ellingsworth's that I know of.

Q. Did you ever make any change in the rack bar of the machine that you took out to Mrs. Ellingsworth's?

A. Not this one. The wood one, yes.

Before we took that machine out to Mrs. Ellingsworth's we ran it different speeds, from 52 to 58 but eventually wound up with 52. We ran the same machine at different
796 speeds. We changed the speed by pulleys on the motor. We did not change the motors. We determined what speed we should run them at by the agitation.

We first took this particular machine, Exhibit 8 A out to Mrs. Ellingsworth's in the summer of 1921 sometime; I could not place any specific date.

Q. Are you quite sure that it was in 1921?

A. Yes, sir.

Q. How do you place that date?

A. Well, we have a record to show that I went to work there May 13, 1920; that was when I went back to the experimental department.

Q. How does that help you in fixing the date in 1921?

A. After I had finished that I worked on this Model 70 intermittently while I was getting this aluminum machine ready so this first wood tub was there in the summer of 1919, through the summer period, and the aluminum was there through the following year, through that period.

Q. About how many hours did it take you to get this machine, Plaintiff's Exhibit 8 A into shape to take out to Mrs. Ellingsworth's?

A. That was kind of a pick-up job; I don't remember; I imagine it would take me thirty hours to finish that as it is now.

I didn't have any drawings or sketches to work from in making up this aluminum tub machine. I did not keep any record of how I spent my time. We did not have a job time system in the experimental department but they had
797 in other places in the factory.

Q. How did you keep track of your work in the experimental department?

A. Just worked until we got it done, that is all there was to that.

Q. Didn't you ever get any written orders?

A. No, sir.

Q. Who helped you on the building of this particular machine, Plaintiff's Exhibit 8A?

A. Well, that power leg and all that was production's—the power leg was production—all I did to that was plane the bottom of the tub off and make the hole large enough to receive that plate that is in there; I changed the rack bar and those castings.

The rack bar came from the wood models, 41 and 42. That Model 41 was a production job. The motor was a stock motor. The Model 70 had the motor mounted the same way that the motor in this Plaintiff's Exhibit 8A is mounted.

Q. Where did you get the dolly for this Plaintiff's Exhibit 8A.

A. That came from the foundry to me.

I couldn't say who it was delivered by, it was delivered from the foundry, just who it was I could not say. I don't know who made it. I did no work in the foundry myself. Clarence Snow was in charge of the foundry. I don't know any men in the foundry who did do any work on the agitator that I put in this machine.

Q. Now, I notice on the cover of this machine Exhibit 8A there is a pattern number 564. What was the practice
798 of the Maytag Company with regard to keeping a record of patterns?

A. Well, when castings were put into production they carried the K number.

Q. Did they have any other kind of a number before they got into production? A. Yes, they did.

Q. What sort of a number was that?

A. It was a Y number.

Q. Was there a regular record kept of pattern numbers? Or drawing numbers?

A. Well, sometimes we got castings before the Y number was applied and was later applied to it. Of course this Y number was always an experimental casting.

Q. Will you just draw for me [plesee] on the piece of paper here from your recollection the shape of the agitator as you put it into this machine, Plaintiff's Exhibit 8 A?

A. I am not so much of a draftsman but I can probably get it. (Witness draws sketch).

(Sketch marked Defendant's Exhibit 42 for identification and received in evidence).

Q. Mr. Miller, do you remember whether or not there was a pattern number on the agitator which you put into this machine Exhibit 8 A?

A. No, I don't. I had nothing to do with the pattern or the foundry work?

Q. Have you searched for any sketches that might have been made in connection with your building of this machine, Plaintiff's Exhibit 8 A?

799 A. No, sir.

Q. You just know there were not any sketches made?

A. I don't know of any.

Q. At least you don't remember having any when you built the machine? A. No.

Q. Now, what time was it that you took that out to Mrs. Ellingsworth's? A. The aluminum one you mean?

Q. Yes.

A. It must have been in the summer of 1921.

Q. What car did you take it out in?

A. In an old Ford with a delivery box in the back end.

Q.—And when did you bring it back?

A. Along in the winter time; it was very cold; it must have been Christmas or something like that time, the first of the year, something like that.

Q. Of what year?

A. If it was January it was 1922, and if it was December it was 1921.

Q. What is your best recollection as to whether it was December or January?

A. Well, just following this wood machine,—it must have been—if it was in December it was 1921. Of course if it extended over that period it was 1922.

Q. Are you sure it could not have been 1920?

A. Yes, I am.

800 Q. And are you equally sure that it could not have been 1922?

A. Yes. Well, if it was January it was; if it was December it was '21.

Q. What is the year of your birth? A. 1881.

Q. And what year were you married? A. 1909.

Q. Have you any children? A. Four.

Q. What is the year of the birth of the first one?

A. (No answer).

Mr. Bristol: May the record show that the witness throws up his hands.

Q. Can you recall the year of the birth of your first child?

A. No, I cannot.

Q. Was that before or after the events having to do with this aluminum tub? A. I could not tell you.

Redirect Examination.

By Mr. Loftus:

Q. Just one question. This sketch that Mr. Bristol asked you to make is just a rough pencil sketch made on the stand?

A. Yes.

Q. And how many impeller blades does it show in that particular sketch?

A. That shows two but it had four.

801 Q. There is one place in the record that I am not sure that I understood you correctly or that the reporter understood you correctly. If the record shows that you, on cross-examination, stated that the machine marked Plaintiff's Exhibit 8 with the wood tub was used in 1919 at Mrs. Ellingsworth's was that correct?

A. No, it was 1920.

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802 DAVID L. MOOAR, of lawful age, being produced, sworn, and examined on the part of the Plaintiff in rebuttal, testified as follows:

Direct Examination.

By Mr. Loftus:

My name is David L. Mooar. I reside at Newton, Iowa. I am thirty-eight years old. I am a draftsman with the Maytag Company.

I first entered the employ of the Maytag Company June 22, 1917. That was at Newton, Iowa.

Q. What was the character of your work for the next few years?

A. I have been employed as a designing draftsman.

Q. What did you have to do in connection with that work, what sort of structures?

A. State the question again.
Q. What machines or devices did you have to do with in carrying on the work of a designing draftsman?
A. Draw designs of washing machines.

I was acquainted with Howard Snyder. I knew him since the first day I was employed at the Maytag Company. My work came under his general direction and supervision. Mr. Snyder is dead. I think he died in 1927.

When I went into that work in 1917, the Maytag Company was manufacturing and selling commercially wood washers both in a power and a hand driven machine. They were of the peg dolly type.

I know George Miller who worked for that company. I came in contact with him frequently in connection
803 with my work. My office adjoined the experimental department.

Q. And as a regular routine how frequently would you have occasion in connection with your work to be in the experimental department in the Maytag Company?
A. I was probably in the experimental department I would say a dozen times a day, at least.

I know of George Miller leaving the Maytag Company on one occasion after I had started with them. I think he went to Denver due to his health—due to his ill health.

Q. Do you know when, if at all, he reentered the employ of the Maytag Company in the experimental department?
A. He first came back and was employed in the yard work, which I understood he preferred, due to the fact that it was better for his health, and then later Mr. Snyder got him to go back into the experimental department.
Q. Do you know what date, Mr. Mooar, that he reentered the experimental department? A. May 13, 1920.
Q. Have you seen the record of employment of the Maytag Company to verify that date? A. Yes, sir.
Q. And it shows that date? A. It shows that date.
Q. Did you see him when he returned to the Experimental department? A. Yes, sir.
Q. Do you know what character of work he was doing when he returned, what work he was assigned to?
A. The first job he was assigned to when he came back into the experimental department was the building of an experimental washing machine for Mr. Snyder.

804 Q. Can you describe that machine, please?

A. The machine that I saw that he built was a wood tub washer and in this tub was a metal disk perhaps fifteen inches in diameter, flanged over on the diameter a distance of perhaps a half inch, and on this metal disk were mounted three wooden vanes which were screwed to the metal plate from the under side with screws. This metal vane was driven by a shaft extending upward through the bottom of the tub located in a suitable bearing below the bottom of the wooden tub. This gyrator, as I call it was driven by a rack bar in connection with a pinion pinned onto the upright shaft, and as I recall it the drive was an experimental power leg which was taken from a Model 70 washer, which we were at that time preparing to put into production.

The tub was a typical wood tub right out of our wood tub stock. I would say this tub was twenty-four inches, perhaps, in diameter. It was a regular stock tub, tapering to the top. It had been used commercially for years.

Q. You spoke about the power leg and the means for driving the disk on the inside of the tub. How did it drive that; what was the motion or travel?

A. The rack bar provided reciprocating motion to the disk. It traveled perhaps half way round and then would reverse in the other direction.

Q. How long after Mr. Miller reentered the experi-
805 mental department on May 13, 1920, was it before he had this machine completed when you saw it?

A. Well, I would judge it to be about probably ten days or two weeks.

Q. After it was completed did you see it in operation?

A. I saw it in operation.

Q. And where?

A. I saw it in the experimental shop on the south wall by the window, and as I recall it it was setting on a box probably two feet off the floor level.

Q. Was there water in it?

A. There was no water in it when I saw it.

Q. Were there any clothes in it?

A. There were no clothes in it.

Q. Did he talk to you about the machine? A. He did.

Q. From what he said and what you saw what did you understand the operation of it to be at that time?

A. He turned the machine on and I saw the gyrator go into its reversing action. That was about the extent of the operation that I noticed.

Q. I will ask you to examine the exhibit of machines in the court room here and see if you can point out any machine that resembles the one you have just described?

(Witness leaves witness stand.)

806 A. This is the machine here (indicating).

(Witness resumes the witness stand.)

Mr. Loftus: The witness referred to Plaintiff's Exhibit 8.

The Witness: That machine is the identical construction I saw in May, 1920.

(Plaintiff's Exhibit 24 marked for identification.)

Plaintiff's Exhibit 24 for identification is a photostat of a sketch I made during the Brooklyn trial in 1935, a sketch of the wood tub gyrator washer I saw in 1920. I presume the sketch was made to show the Court what I saw. That was drawn on the witness stand.

(Plaintiff's Exhibit 24, a sketch, received in evidence.)

(Plaintiff's Exhibit 25 marked for identification.)

Q. I call your attention to three sheets of paper fastened together, the first sheet appearing on the letterhead of Parkinson & Lane, which we have marked for identification Plaintiff's Exhibit 25, and I call your attention to a penciled sketch or sketches appearing on the last two sheets, on the back sides, and ask you to look at it and say whether or not your signature appears thereon?

A. That is my signature as a witness.

Q. Was the signature made by you?

A. The signature was made by myself.

807 Q. How about the date line immediately above the signature?

A. I was in the habit of dating my witness' signatures.

Q. You signed that on the date appearing thereon?

A. I did; yes, sir.

Q. The date line above your signature is your handwriting? A. Yes, sir.

Q. Do you recognize the other signature on this sketch, Plaintiff's Exhibit 25? A. Yes, sir.

Q. Whose signature is it?

A. That is Howard Snyder's signature.

Q. And he was the Howard Snyder in charge of the experimental department of the Maytag Company?

A. He was.

Cross-Examination.

By Mr. Bristol:

Q. Did you produce this paper which has been marked Plaintiff's Exhibit 25 for identification at the time you testified in the Brooklyn Edison case?

A. It was not available at that time.

Q. You did not produce it, then? A. No, I did not.

Q. Where was it at that time?

A. Well, it was found in an old drawer in the experimental department.

Q. When? A. It was found in July of this year.

Q. In July of 1937? A. Yes, sir.

Q. Who found it?

808 A. Well, the entire experimental department was torn up and rebuilt, that is, the offices and shop, and that sketch was found amongst some of Mr. Snyder's effects that hadn't been uncovered before or previously.

Q. Can you tell me who found it?

A. I think Mr. Bradt found it.

Q. And that was the first time you had seen it?

A. He brought it up to me some time later. I wasn't working in the experimental department during a period of about a week while they were tearing the place up and the workmen uncovered quite a few old papers and miscellaneous data in an old bench that was used for storing old tools and experimental material.

Q. Who was it you say brought this paper to you first?

A. Mr. Bradt.

In the summer of 1937 my work was in the experimental department. I have been in the experimental department for about a year and a half. I was employed in the tool design department prior to that. From May, 1935, to the next summer, 1936, I was employed periodically back and forth between the experimental department and the tool room; in other words, wherever I was needed the most I worked.

Q. And where were you employed prior to May, 1935?

A. I was employed at the Maytag Company prior to that.

809 Q. Have you been employed at the Maytag Company continuously? A. No.

Q. What intermissions?

A. There was an intermission from August, 1934, to May, 1935, that I wasn't employed at the Maytag Company.

Q. Where were you employed?

A. I wasn't employed during that time.

Q. What were you doing? A. Nothing.

Q. Why did you leave the Maytag Company?

A. I was dismissed.
Q. For what? A. I never found out.
Q. What was your connection at the time of the trial of the Brooklyn-Edison case? A. My connection with what?
Q. Any means of making a living?
A. Well, I had a little money saved up was my only means of livelihood.
Q. What was the time, approximately, when you testified in the Brooklyn-Edison suit?
A. It was the last week in April, 1935.
Q. And when did you start working for the Maytag Company again?
A. I started in the middle of May, 1935.
Q. Was there any connection between the fact that you testified for the Maytag Company in that case and the fact that you got a job shortly thereafter?
A. I wouldn't know that. That would be for someone else to judge.
810 Q. Who fired you?
A. The board of directors.
Q. And who communicated the sad news to you?
A. Mr. McAnly.
Q. Did Mr. Bradt have any conversation with you about it? A. No, he did not.
Q. Who re-hired you?
A. Mr. Bradt re-hired me.
Q. Have you been working under Mr. Bradt since you went back? A. No, I haven't.
Q. Under whom have you been working?
A. I started to work under Mr. Herbst.
Q. Now, I would like to go a little further into this matter of why you were fired. I hope you will excuse me for pressing you on that. A. That is perfectly all right.
Q. What had you been doing prior to that?
A. Just what particulars would you like to have?
Q. I want to get at the reason you were fired. You weren't just laid off, were you?
Q. You were definitely dismissed?
A. I was definitely dismissed; yes, sir.
Q. It wasn't merely a lack of sufficient work for you at the plant? A. Oh, no.
[A]. Have you no ideas as to the cause of your dismissal?
811 A. Yes, I have ideas of my own, of course.
Q. Please state what you believe to be the cause of your dismissal?
Q. Please go ahead and state what you believe to be the causes for your dismissal?

A. Well, I was dismissed due to an automobile accident; that was the reason given me.

Q. Tell us just in what way that was the cause of your dismissal?

A. Well, I was in a car wreck. I ran off the road and the man with me was killed.

Q. Had you been drinking?

A. No, I hadn't.

Q. Was there any other cause for that dismissal, Mr. Mooar?

A. Well, I have some personal opinions of my own I wouldn't care to air here.

Q. Please state the substance of what you believe to be the causes for your dismissal, in addition to this automobile accident?

A. I think the reason for my dismissal dated back about eight years, back to when I gained the enmity of one of our present board of directors.

Q. Who was that? A. George Umberit.

Q. What did you do that incurred his enmity?

A. I ran him out of my department at one time several years previously.

Q. And he later became a director of the company?

812 A. Unfortunately for me, he did.

Q. What was your department at the time you ran him out?

A. I was in charge of the drafting department.

Q. How long had you been in charge of that department?

A. Well, from 1919 until the time of my dismissal.

George Miller and John Mikulasek were in the experimental division in 1919. Mikulasek today is a draftsman for the Maytag Company. He has something to do with the experimental department today as a draftsman. He had some responsibility in the experimental department prior to Mr. Snyder's death, just as a draftsman. In 1919 his drafting table was located in Mr. Snyder's office. In 1921 it was in the same place. It continued in the identical place until 1923, at which time we moved our experimental department. There was no change in Mr. Mikulasek's duties at any time over the period from 1919 until Mr. Snyder's death that I know of. I last saw Mikulasek last Monday morning.

I have been in Kansas City since Monday morning. I have talked over with Mr. Loftus the matters about which I was to testify here today.

Q. Anybody else? A. Nothing of any consequence.

Q. When did you talk to Mr. Bradt last?

A. Oh, as far as discussing anything concerning this case, probably about a month ago.

813 Q. Haven't you talked with him about any phases of that since Tuesday afternoon of this week?

A. I do not recall discussing anything of any consequence with him.

I do not know that Mikulasek is in town today. He appeared to be in good health when I saw him on Monday.

Q. You say that Mr. Mikulasek is only a designing draftsman or a draftsman in the experimental department?

A. That would be my idea of it.

Q. Didn't you testify in the trial of the Brooklyn-Edison case concerning him, "He came into the experimental department as a laborer and after that he became a machine designer. I imagine he is regarded as in charge of the experimental room at the present time. He has been in that position since Mr. Snyder's death. Before that he was a designing draftsman working under Mr. Snyder." Did you so testify?

A. You just got through asking me what Mr. Mikulasek was doing before Mr. Snyder's death, as I understood it. You made no reference to time after Mr. Snyder's death, or I so would have stated.

Q. Did you ever give the testimony which I have read to you? A. That is correct.

Q. When did you last read over the record of your

814 testimony in the Brooklyn Edison case?

A. I think I looked it over Tuesday evening.

Q. What is the practice of the Maytag Company with regard to preserving drawings?

A. Well, the present procedure is a great deal different than was used twenty years ago.

We preserve drawings today with a reasonable degree of care. In 1919 the Maytag Company preserved drawings. In a great many instances drawings were signed and dated so that they could be identified in those days. It was the usual procedure to put numbers on them.

Before I gave my testimony in the Brookyln Edison case I had looked at this wooden tub affair that is in evidence and has been marked here Plaintiff's Exhibit 8. I had looked at it perhaps a month before the Brooklyn trial.

Q. I understood you to say that that Exhibit or perhaps the structure of that Exhibit, and I was not quite clear which, is the identical construction which you saw in 1920. Is that what your testimony was?

A. I said it was the identical construction.
Q. Do you mean to say that this particular Plaintiff's Exhibit 8 is the same apparatus that you saw in 1920?
A. It is a replica of what I saw in 1920.
Q. When was it constructed?
A. Well, it was constructed, as far as I know, by Mr. Miller previous to the Brooklyn trial.
815 Q. That is all you know about it?
A. That is all I know about it, yes.

I don't know Mrs. Ellingsworth but I have heard of her. I have heard that the present state of her health was not very good.

Q. Will you describe the interior of this tub that is in evidence here as Plaintiff's Exhibit 8?
A. You mean the wood tub that I referred to a short time ago?
Q. Yes, this one right here?
A. The inside of the tub?
Q. Yes, please.
A. Do you wish me to repeat my former testimony?
Q. Well, if you have got it well learned go ahead and repeat it but can't you describe the interior of the tub without going over the same words?
A. Do you wish me to re-describe it?
Q. Yes.
A. The inside of the tub is composed of a metal disk, perhaps 15 inches in diameter, a flange on the diameter downward perhaps a half inch. On the side disk are screwed three wooden vanes, perhaps 5 to 6 inches long, ¾ of an inch wide approximately and approximately an inch and a half high. Do you wish me to go further?

The gyrator is driven through a power leg composed of a crank on which is mounted a rack bar which in turn oscillates the gyrator by means of a pinion pinned on to the horizontal shaft connected with the gyrator.

The inside walls of the tub are corrugated, as has been the case with all of our wood tubs since we started to build them in 1911 or 1912. The bottom is also corrugated. That power leg that I say I saw in 1920 was taken from a Model 70 washer of which we probably had three or four models and which had not as yet gone into actual production.

816 Q. And what is the diameter of that wooden tub?
A. I would say about 24 inches.
Q. At the top or the bottom? A. Well, that would be probably at the bottom. It has been twenty years since I

have had any occasion to measure a wood tub. The later machines I would be much more familiar with the actual dimensions.

I would not have any way of knowing the actual dimension of the tub I saw in 1920 without referring to our blue prints of the wooden tub. I did not bring any of those with me. They are in the plant, and available to me, if I wanted to look at them.

Q. What was the diameter of the metal disk that you say was mounted in the bottom of this wooden tub that you saw in 1920?

A. As I stated twice, it is approximately 15 inches in diameter.

Q. Did you look at any blue prints to remember that by?

A. Well, I have heard it given as 15 inches.

Q. By whom?

A. It has just been generally, my general knowledge that it was 15 inches.

Q. Who told you it was 15 inches?

A. I don't recall at the present time.

817 Q. Did Mr. Bradt tell you that?

A. He did not tell me anything as regards dimensions.

Q. Well, who did?

A. Well, I wouldn't know.

Q. Can't you remember that?

A. Well, I would have no way of knowing.

Q. Who told you the dimensions of these wooden blades that you were supposed to have seen in 1920?

A. I simply gave them to you as near as I could remember them.

Q. Do you remember them from what you saw in 1920 or do you remember them from what somebody has told you since or what the talk has been around the plant?

A. All of the dimensions that I gave I said were approximate. I did not list them as absolute actual dimensions.

Q. Then you do not want to be understood as having a distinct recollection of your own from what you saw in 1920, is that right?

A. I would say that the dimensions as I have given are approximately what I saw in 1920.

I am positive it was not 1919. I am positive it was not 1921, or 1922, or 1923.

I am married. I was married in June of this year. I had been married before. I was married before in 1922. I have

one child. The birth of that child was Friday, December
818 13, 1925, to the best of my recollection. The boy is fourteen so you can figure it out for yourself. The date of his birth was 1925. The boy is going on fourteen, he will be fourteen. He will be fourteen in a few days, as near as I can remember. I think he was born in 1925, December.

I believe I testified I saw the wood tub gyrator machine operated in approximately the latter part of May, 1920. I saw the agitator reversing backward and forward; that was the extent of the operation that I saw. It did not have any water in it. I saw that operation in the experimental room. It was by a window on the south wall. It was sitting on a box, as I recall it, perhaps two feet off of the floor. Mr. George Miller operated it. My recollection is very clear about that.

Q. Is it better today than it was in 1935?
A. Approximately the same.
Q. In the Brooklyn Edison case didn't you testify "I don't recall ever seeing that machine operated?"

Mr. Loftus: Let us see that in question and answer form.

Mr. Bristol: I haven't got it here.

Mr. Loftus: I think it is only fair to advise the witness that the book shown him is a mere narrative form of his testimony; the original question and answer itself is not there.

819 Mr. Bristol: I will be glad to have it if you will locate the place for me.

Mr. Loftus: I do not think it is important but I wanted to advise him.

A. I perhaps took the question as it was asked me then as to whether I had seen the machine actually washing clothes; that is probably the way I understood the question.
Q. Well, your testimony now is that you saw it operated but without water, is that right?
A. That is what I testified.
Q. And the printed record of your previous testimony reduced to narrative shows "I do not recall ever seeing that machine operated".

Mr. Lane: I think you better read the rest of that testimony.

A. I have referred to an actual washing being accomplished at the time.

Mr. Loftus: What page is that?

Mr. Bristol: 1863.

We referred to the disk in the bottom of the wood tub as a bottom type dolly, at the time I first saw it. Gyrator was the name given to it in later years. I believe the word agitator was used previously to the word gyrator. We had no name for it at the time that the first one was built in 1920. As I said before, we merely referred to it in the best way we could at that time as a bottom type dolly.

820 When Mr. Bradt showed me this Parkinson and Lane letter that has been marked Plaintiff's Exhibit 25 for identification, he asked me if I remembered seeing it. He told me where it had been located. He did not tell me who located it.

Q. Have you been chatting with the other witnesses since you came to Kansas City this week?

A. Occasionally, yes.

Q. Who were the others?

A. Mr. Miller, Mr. Stephen and Mr. William Elliott.

Q. Is that all?

A. That is all the witnesses that I know of.

Q. And are all of those people and yourself stopping at the Pickwick Hotel? A. Yes, sir.

Q And have you conferred with Mr. Bradt and Mr. Loftus?

A. I talked to Mr. Loftus—

Mr. Loftus: I might say, Mr. Bristol, I generally talk to a witness before I put him on the stand to find out what the facts are.

Mr. Bristol: I suppose you do; I always do myself.

A. I believe I talked to him a few moments Tuesday night as I recall; I would not be sure.

This letter, Plaintiff's Exhibit 25 for identification
821 was found in the experimental department when they tore it up to rebuild the offices and the shop. It was found in the shop part of the experimental department, in a drawer in a sort of improvised combination bench and tool chest. I remember the box of course, I remember seeing some old tools in it and some experimental department material such as short pieces of brass rod and such miscellaneous manufacturing material as we would have around

an experimental department shop. Certain parts of the department could be probably classified as sort of a junk bin. I don't know which drawer this paper was found in. I have passed that particular bench that is in question when the drawers were open and have noticed with my own eyes these tools and miscellaneous material that I have already mentioned. I had done that for perhaps a year and a half previous to the present date. I think that drawer had been there before.

Q. And you had been in and out of the room a dozen times a day, hadn't you?

A. Are you referring back to our old experimental department, the original one in 1920 or the later one of approximately this period of time?

Q. Was there a difference prior to July, 1937, and back in 1919 and 1920? A. Yes.

Q. What was the difference?

822 A. The experimental department in 1920 was located in one of our buildings in the west end of our plant and as I previously testified, in 1923 we moved our entire experimental department to another building in the northeast corner of our plant, I should judge a distance of 200 yards away from the original experimental department location.

This paper was found in the latter location where our present experimental department is. That is where I had noticed the drawer when one of the workmen happened to have the drawer open to procure a tool or some material and neglected to close it for the time being. That was only over the last year and a half that I had seen that drawer opened or closed; I was not in a position to see it previously as I did not work in the experimental department previously. Prior to the time that I was dismissed from the Maytag Company, I went into the office quite often. I had not had any occasion to pass this drawer at that time.

Q. Had you had occasion to pass this same drawer before?

A. I had occasion to pass it at that time.

I did not see this piece of paper in there at any time in the last year and a half in the drawer. I saw one of the drawers open; I wouldn't say it was the drawer that the sketch was located in. The first time I saw the sketch was when Mr. Bradt showed it to me.

823 Redirect Examination.

By Mr. Loftus:

That is the first time since I signed it. That is the first time I have seen it since I signed it.

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824 JOE STEPHEN, of lawful age, being produced, sworn, and examined on the part of the plaintiff in rebuttal, testified as follows:

Direct Examination.

By Mr. Nelson E. Johnson:

My name is Joe Stephen. I live in Newton, Iowa. I have lived there for a little over twenty-nine years. I am in the employ of The Maytag Company.

I first went to work for them on August 20, 1908. There was an interval in that time in which I wasn't in their employ; I was in the Navy. I went in the Navy August 10, 1918. I was discharged November 19, 1919.

When I was discharged from the Navy, I believe I stayed out a week and went back to work then for the Maytag Company. It was the first of December, 1919. When I went to work for the Maytag Company the second time I had made plans to go to farming, in the spring of 1920. I did not do that.

I am acquainted with George Miller. I have known him, I would say, at least twenty-five years.

In the Maytag plant in 1919 I worked in the sheet metal work, blacksmith work, and plating department. I recall doing some particular work for Mr. Miller along in the spring of 1920. If I remember right it was a disk for a dolly. It was made out of sheet steel. I beg your pardon, I do not think Mr. Miller brought in very much work for the first three months after I returned. I made this metal disk I should judge about the middle of May, 1920. This disk was a sheet iron disk cut out I judge sixteen inches in diameter and
825 flanged a half inch around the edge.

Mr. Miller took that disk; took it away from the department. I saw it after he took it. I saw it inside of the machine.

I was acquainted with Mr. Snyder. He took charge of all the experimental work; he was experimental engineer.

I saw this metal disk again. I think two or three days after I made it. At that time it was inside of a machine, a wash-

ing machine, a wooden tub machine. It had vanes on it, three vanes. It was on the bottom of the machine. I did not see it operate.

Q. Did you testify in the Brooklyn-Edison case?
A. Yes, sir.
Q. At that time did you make a drawing of what you saw in this tub?
A. I don't know if you would call it a drawing; it was a sketch; it wasn't a drawing.

(Photostatic sheet marked Plaintiff's Exhibit 26 for identification).

In a photostat marked Plaintiff's Exhibit 26 the bottom sketch is the dolly or disk, whatever it is, looking down from the top of the machine. I think this is a photostat of the sketch I made when I was testifying in New York. The upper part is looking at it sideways, if you can see through the tub.

826 (Exhibit 26, a photostatic copy of a sketch, received in evidence.)

This tub in which I saw this dolly was up in what they call the experimental department. I did not see it operated at all. I saw it just once that I know of, at that time

Q. Do you see in this court room any tub that resembles the one that you saw this dolly in?
A. I saw one just like it, one that I thought was just like the one that was made at that time.
Q. Will you point out to us which one that was?
A. (Witness indicates).

Mr. Johnson: The witness is now indicating Plaintiff's Exhibit 8.

Cross-Examination.

By Mr. Bristol:

I cannot recall the next piece of work that I did for Mr. Miller back in that time, that year. I do not believe I can recall how many more pieces of work I did for Mr. Miller through the year 1921. I came back there in December, 1919 and I did very little work for him, very little experimental work, if any, up to this here present piece. I had worked at the Maytag Company prior to the time I went in the service. Mr. Miller was there, too, off and on. He was gone while I was gone at some time. He was there also before I went

away to the service. I did sheet metal work for him
827 before I went into the service off and on. I expect I did sheet metal work for others in the experimental department.

Q. Now, will you just describe what particular piece of it that you did in 1920? A. In 1920?

Q. Take one first in 1918 before you went in the service?

A. Well, that is a pretty hard thing to do, that is a pretty hard thing to describe. What piece do you want me to describe?

Q. Any one particular one that you happen to remember?

A. Well, take the piece for the swinging wringer when the swinging wringer was first made. That was made sometime in 1912, I think.

Q. And just what time of year was that made?

A. That was made about in the summer time, in the middle of the summer.

Q. Did you testify in any litigation on the swinging wringer patent? A. No, sir.

Q. Just tell me of some particular piece of sheet metal work that you did for anybody in the experimental department in the early part of 1918?

A. Well, that is a pretty hard thing to do unless you recall the pieces because there was so many pieces made, quite a few pieces made there.

828 Q. Will you describe for me please any particular piece that you made for the experimental department in the year, early part of the year 1921?

A. In the early part of 1921 there was very little sheet iron work made in the experimental department.

Q. How about the middle of 1921? Can you remember any then?

A. That same answer would apply there.

Q. And the fall of 1921?

A. Well, that same answer would apply there. If you could recall the piece I believe I could describe it, what I made but they were all minor things. If a person is required to describe the piece or what they want made I believe I could tell you all right.

Q. Did you bore any holes, drill any holes in the disk that you testified about in your direct examination?

A. No, sir, there was no holes driven that I know of.

Q. Were there any holes in it when you saw it the next time?

A. Not that I know of; I didn't pay no attention to the holes.

It had three blades on it. I remember that. They were made of wood. I didn't pay no attention to whether it was hard or soft wood. I would say they were soft wood but I would not swear to that.

829 I did not have any occasion to think of this particular job from the time I made it until 1935. I had forgotten it until it was brought to my attention. Mr. Bradt, I think reminded me of it. I think it was in the experimental department that Mr. Bradt reminded me of it. There were several of them there when he came to talk to me about it but I just don't remember who they were.

I am acquainted with Joe Mikulasek. In 1920, I think he was in the experimental department if I remember right. He is working now in the same place I think. Mr. Woodin, I think is in charge of the experimental department now. I last saw Mr. Mikulasek about three weeks ago. His health was good as far as I know. He was going home to lunch. I walked home with him to lunch.

Q. How did Mr. Bradt refresh your recollection about this old work?

A. Well, it seemed he just asked me in regard to it, if I made it.

Q. Could you remember the date when you made it at that time?

A. No, sir, not the exact date.

Q. Could you remember what year it was?

Q. Well, it was in 1920.

Q. I mean when Mr. Bradt first came to ask you about it, could you at that time remember the year when you made it?

A. Yes, sir, yes, sir.

830 Q. How did you happen to remember the year?

A. Well, that year was one of the most unusual years that I put in. I intended to leave the first of April and that year was the last year, I believe the last year we built any feeders and I did not start the work on the feeders—did not want to start the work on the feeders because I intended to leave the first of April, and I did not start at the feeder work until a month after the first of April and at the time this work was brought in there, this disk was brought in there the man that was working on the feeder work, I had to put him at this disk and I knew that was about the middle of May because I did not start at the feeder work until around the middle of May—until around the first of May.

Q. And who was the man you put on the job of making the disk?

A. J. J. Campbell.

831 Friday, December 3, 1937.

(Photographs of Defendant's Demonstration machines marked Defendant's Exhibits 43, 1 to 14 inclusive for identification and received in evidence.)

Cross-Examination.

By Mr. Bristol:

As to Mr. Mikulasek's first name, we always call him John. There is only one Mikulasek there at the Maytag Company that I know of.

Q. When you do a job in your department don't you get a form of a requisition for shop supplies, telling what is wanted?

A. They do at this time but I am not in the department any more.

I am now in Department 3, the machine shop. I think my department issues those requisitions for shop supplies whenever they want them. They have got a form made out for shop supplies and a form for purchase supplies. They have got a form for supplies that are carried in the factory and a form for those that are not carried in the factory. I would say the last four years I was in the sheet metal department we got one of those forms whenever they wanted my department to do something, but before that we did not. I am pretty sure. Well, we did, in you might say a big job or something of that kind but the little jobs we didn't. Up to a time, say 1930, we got very few orders from the experimental department,
832 written orders. Really, the foundry—they are more strict in the foundry in regard to requisitions for shop supplies than any other department. More strict in the foundry than any other department. Those requisitions for shop supplies are made out in duplicate.

Department 3 where I am now working is the machine shop, the production department. The machine shop and the production department. That is not the experimental department. The number of the experimental department is 29. That is what it used to be when I had charge of the department; I don't know what it is now. I would not say whether that was its number back in 1920, 1921 and 1922. That was the number of the department when I left in 1930. Say in 1930 and 1931 and 1932.

Up to the time that I left the sheet metal department we got drawings when some parts were wanted; we did the last

few years more so than we did in 1920 or after, say from 1920 to 1925. We generally destroyed those drawings after we used them. Drawings that were sent to the department were generally left in the department at that time. Some that we received were blue prints and some of them were just rough sketches or drawings on paper.

For the dimensions and shape of this disk that I talked about, there were no drawings sent in there, just a verbal order; there was no drawing sent in there of that, of any kind. Well, if a record had been made,—it had not
833 been made to my knowledge; it would be made after it left the department.

In 1920, 1921 and 1922 there were overhead records and production records. We did not keep no records—all we kept was the overhead record and the production record. We kept the overhead record separate from production. There was no record kept on that single item. When we did a job that was chargeable to overhead, I think we had time cards, numbers and the time cards. There was no record kept in the department at that time, not the overhead; that went direct to the office.

My understanding is that the Y book is where all the Y numbers are kept in, the experimental numbers. I could not tell you where that Y book is actually kept. I never saw it or anything. It is my understanding that the Y book is the book in which the numbers of all the patterns for the experimental department are entered, but nobody ever told me anything about it, but that is my understanding but nobody ever said anything about it and you are the first one that ever mentioned it to me.

I don't think I have ever at any other time seen any wooden tub apparatus around the experimental department with an agitator mounted in the bottom of it. In fact I didn't pay much attention to it. The only thing I paid attention to was this here because that is my line of work.

834 I don't remember ever making a steel disk for Mr. Snyder of that kind. There might have been a straight disk but there was not a disk made that was flanged down here like this one here. I may have made a straight disk, we may have got out a straight disk, I would not say that, but I never made a disk that was flanged down like this here for Mr. Snyder.

Q. Did you ever make a disk with a four degree taper on the edge for him?

A. A 4 degree taper?
Q. Yes.
A. How do you mean a 4 degree taper?
Q. A disk, perhaps a quarter of an inch thick?
A. No, sir.

Plaintiff's Exhibit 26 is a copy of a sketch that I made during my testimony at the Brooklyn-Edison trial; that is my understanding of it. I think that I recognize that.

Q. The night before you made that did you make any other sketch?
A. Besides this one, here (indicating)?
Q. Yes.
A. That is something I can't answer; no, sir.
Q. Didn't you make a sketch for Mr. Lane the night before?
A. We talked about a sketch. I made a sketch the night before yes.
Q. That was to practice up, was it?
A. I didn't think it was a sketch; I didn't think it would be a sketch.
835 Q. Did that represent your recollection of the old wooden tub machine that you testified to in that case?
A. It represented the disk that I testified about.
Q. Did you make more than one such sketch the night before?
A. I think there was two; I am pretty sure there was two, kind of more practice sketches than anything else; in fact, that is what I thought they were.
Q. Who else was there beside Mr. Lane when you made those practice sketches?
A. I don't think nobody that I know of.
Q. That is the Mr. Lane who is sitting here in the court room?
A. If I remember, Mr. Lane and I was in the room alone; that is all I recollect.
Q. Can you recognize this page that I show you (handing book to witness)?
A. Yes, sir; that looks like my sketching all right.

Mr. Bristol: I offer this page of the Brooklyn-Edison record, Page 2658, in evidence, and ask that it be marked Defendant's Exhibit 44, and I would like the privilege of substituting a copy so as not to destroy this record.

(Defendant's Exhibit 44 was marked for identification, offered, and received in evidence.)

836 Q. I show you the next page in the same book, Page 2659. Can you identify that?

A. I would say it is my sketch.
Q. Both figures on that one page? A. I think so.
Q. Was that one of the two sketches you made for Mr. Lane the night before you testified in Brooklyn?.
A. I couldn't say as to that, but that looks like my sketch.

Mr. Bristol: I offer this page of the Brooklyn-Edison record, Page 2659, in evidence, and ask that it be marked Defendant's Exhibit 45, and I would also like the privilege of substituting a copy so as not to destroy this record.

(Defendant's Exhibit 45 was marked for identification, offered, and received in evidence.)

The Witness: Nobody said a word to me about sketches for this trial. Before I made these two sketches that have been marked Defendant's Exhibits 44 and 45, I had not seen the wooden tub replica that is here in court, Plaintiff's Exhibit 8.

Q. In the Brooklyn-Edison case didn't you say, "I had not seen that in the court room. I might have seen it in the hotel"?
A. I wasn't positive if I seen it in the hotel. I am not positive right now if I had seen it in the hotel.
Q. Had you seen it out at the factory?
A. Not after I seen it right after I made the disk, I hadn't seen it afterwards.

837 Redirect Examination.

By Mr. Johnson:

In 1920 in my shop I would not have to obtain a requisition for material the size of this disk; the material was all in my department. Suppose we got a job in there and didn't have a sheet big enough for the job, we would have to order a whole sheet for it. There would be some left over and we would call that scrap. It wasn't really scrap, but small pieces. If we had to requisition a big sheet for some job we would use it on that job and if there was some left of it over, we could use it on any other job that didn't need more than we had there. If a half or three-quarters of a sheet was left over we could use it for anything. That was what we called scrap.

When I mentioned overhead record of time I meant the time and the material kept separate from the production so the overhead expense could be kept separate from the production expense. I don't think we kept a record of such jobs as this disk. I think that was charged to that one department.

Recross Examination.

By Mr. Bristol:

I say that was charged to one department. I mean the experimental department. It got charged there when we put the number on the time card, the experimental number on the time card. Then those time cards went to the office. I don't know where they went after the time was figured off them.

838 Redirect Examination.

By Mr. Johnson:

The disk wasn't given a number. The time and the material wasn't large enough. They were charged to that department. If we had a dozen jobs, all the time was charged to that department, small jobs. In this instance there was no record made in my department, no record made of it in any shape or form in that department.

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839 CHARLES VINCENT THORNTON, of lawful age, being produced, sworn, and examined on the part of plaintiff in rebuttal, testified as follows:

Direct Examination.

By Mr. Johnson:

My name is Charles Vincent Thornton. I live in Detroit, Michigan. My age is forty-three. I was in the employ of the Maytag Company from March, 1919 to October, 1920. I have not been in their employ since that time. I am not connected in any way with the Maytag Company.

I am acquainted with Mr. Miller, who testified here yesterday. I got acquainted with him while I was in the employ of the Maytag Company. I was in the pattern department at the Maytag Company. I was foreman of that department.

I was acquainted with Mr. Howard Snyder. He had charge of the experimental department. That department was located on the same floor as my department, right next to the pattern shop.

I had occasion to go into the experimental department quite often. I have a recollection of Mr. Miller being associated with the experimental department. He was with that department in the month of May, 1920, up to the time I left he was still in the employ of the Maytag Company in the experimental department.

I know of him having something to do with work on an experimental washing machine. He was working on
840 an agitator that was to be driven from the bottom of the tub. Most of this work was done in the experi-

mental department, and the machine work was done in my department. I saw this machine work being done. That was in the month of May, 1920. I actually saw this machine he was working on. That was in the experimental department.

In the machine that I saw there that he was working on, he had taken an old tub and converted it so that he could use this underneath drive, and this agitator that he had made out of a steel disk. The agitator was placed in the bottom of the tub. The agitator had three wooden blades. They extended approximately an inch and a half above the surface of the agitator. This disk or agitator was placed close enough to the bottom of the tub to keep it from binding on the bottom of the tub; in other words, I could just about place my fingers underneath the steel disk or agitator.

I saw this machine operate. George Miller was present and Howard Snyder was present. It had water in it when I saw it working. The agitator had the effect to force the water to the side of the tub and it would roll up over into the center of the tub, to the agitator. The current was set up from the agitator out to the walls of the tub and then up the sides of the tub. Then it would roll back into the center of the tub. I saw clothing in this tub while it was being operated. These currents had the effect on
841 clothes to throw them around in the water. Two occasions I saw this machine operate and in all probabilities it was operating while I was going back and forth from the experimental room into the pattern shop.

I had a conversation with Mr. Snyder at the time I saw this machine operate. He said "'Charley, I want to show you something different.'' That was the first time that I saw the action of the water in the tub. He asked me what I thought about it and I told him, I said "Well, that is something entirely different anyway" or words to that effect. I don't remember the exact conversation but that was about what I could say the conversation was. I have not been back to the Maytag plant at Newton since I left in October, 1920. I have not been back to Newton, Iowa at all.

Cross-Examination.

By Mr. Bristol:

Mr. Bradt asked me to come here from Detroit to testify. That is Mr. Roy A. Bradt, vice-president of the Maytag Company. I think that is his office. I have been in Kansas City just before going on the stand this morning since Tuesday.

My machinery was used in getting that wooden tub in shape. It was used for the work that was necessary in the

lathe and the work that was necessary in the milling machine. The time of men in my department was not used on that job, to my knowledge. Mr. Miller operates all ma-
842 chines, including a milling machine.

At present I have no connection in Detroit. That is my home. I am a pattern maker and a die model maker for the Central Manufacturing Company. There is no connection between that company and the Maytag company to my knowledge.

I had not seen other machines in the experimental department back in 1920 with dollies in the bottom of the tubs. This wooden machine was not the only thing I ever saw in the experimental department. They were continuously testing the models that they were manufacturing at that time. The Maytag Company was not manufacturing a bottom dolly type of machine to my knowledge. I mean by saying a bottom dolly, a dolly that was operated from the bottom of the tub.

They had a machine with a dolly that slid down over a center post and revolved in the bottom of the tub, that was a new type, that was the square tub that was not in operation until I left. I had not seen it at Maytag's to my knowledge.

Q. Would you just step down here a moment so that you can look at an agitator. I call your attention to the agitator in the aluminum tub machine, Plaintiff's Exhibit 8 A. Did you ever see that agitator or anything like it while you were connected with the Maytag Company?

A. That agitator was there.

Q. Do you mean this particular agitator that is in this particular machine? A. Well, one just like it.

Q. And that was before you left the Maytag Company?

A. Yes, sir.

843 Redirect Examination.

By Mr. Johnson:

Q. Mr. Thornton, what parts of this machine were worked on in your department by Mr. Miller?

A. Well, the parts of the power leg was worked on and the drive, the rack that drove the pinion connected with the shaft.

I am employed now by the Central Manufacturing Company which is located in Connersville, Indiana; but my home is in Detroit.

844 FREDERICK F. MASON, of lawful age, being produced, sworn and examined as a witness on behalf of the Plaintiff, in rebuttal, testified as follows:

Direct Examination.

By Mr. Lane:

My name is Frederick F. Mason. My age is fifty-nine. I live in Evanston, Illinois.

I am connected with the firm of Parkinson and Lane of Chicago. I have been connected with that firm since April 25, 1917. I have something to fix that date by, my diary that I started to keep the day I went to work and have kept diaries ever since. I will read from my diary the record of that date. This is the diary that all the pages are blank back of April 25th because that is the first day I went to work. That is the year 1917, that is the first day that I went to work and from then on I commenced keeping the diary. The pages back of that were blank because I had not been working prior to that date.

The Court: And you have kept it ever since?

The Witness: Yes sir, from year to year.

The Court: I thought that custom discontinued with John Quincy Adams.

I knew Howard Snyder. As to my first meeting with Snyder, I have refreshed my recollection from my diaries and on October 17, 1917 I was instructed by you to go down to the Coliseum in Chicago and inspect a new cylinder washing machine that had been made by the Maytag Com-
845 pany. I was instructed to take the draftsman along to make drawings for a patent application. The machine was not there the first day so I had to go again, the second day, and took the draftsman and we made the sketches for a patent application. Then on October 30, 1917 Mr. Howard Snyder came into my office to explain that machine to me.

I have got a record in my diary and which I will read from about that occasion. On Wednesday, October 17, 1917 I have an entry that reads this way: "Time spent in going to Coliseum with a draftsman to inspect the Maytag Company's new cylinder washing machine. No one there at first and machine not arrived yet". That is the 17th, and the next day, October 18th, I have an entry which reads "Trip to Coliseum with draftsman to inspect Maytag Company's new washing machine."

Then on October 30, 1917 I have an entry made at that time in my own handwriting, which reads: "Time spent with Mr. Snyder of the Maytag Company in going over features of new cylinder washer."

That was the first time I had ever met Mr. Snyder and during the conversation, while he was explaining this machine to me I said to him "Mr. Snyder, do you like the cylinder machine". I had been studying the various kinds of machines and was interested in them and he said "no, it is too hard on the clothes but I am working on a new machine that I am going to bring out sometime which will beat them all", and I said "Is that a cylinder machine?" He
846 said "no". I said "what is it". He said "it is a machine in which there is an impeller mounted in the bottom of the tup with upstanding ribs or blades which when oscillated sufficiently fast would throw the water laterally outward to the side of the tub, then up and around and back to the impeller".

I met Mr. Snyder again as shown by the diary—that is the way I fix the date—on January 21, 1921. You called me into your room and Mr. Snyder was in there and he had with him some photographs of a new machine that they were bringing out, a machine which had two tubs fastened together and he termed it the Siamese Twins, and at the same interview we were also discussing an application that was then pending in which an amendment was to be prepared in the near future.

I will read the entry from my diary that fixes that date in my mind. On January 21, 1921 there is an entry reading: "Maytag Company—hyphen—interview with H. F. Snyder, parenthesis, in Mr. Lane's room, end of parenthesis—re various patent matters and new patent application, quote Siamese Twins, end of quote." I have the file of that Siamese Twins application and there is a letter in this file dated January 3, 1921 from Mr. E. H. Maytag. It reads: "Wallace R. Lane, Chicago, Illinois. Dear Sir: Mr. Snyder would like to come to Chicago in the near future to go over several matters with you and he suggested coming in about ten days. I will probably be there during the week of 17th, probably about Wednesday and if you are going to be there at this
847 time Mr. Snyder and I will come together." I don't find an answer to that letter. If there is, it is not in the file. But at any rate, according to my diary, Mr. Snyder came in on the 21st of January of that year, 1921.

I have something that he brought in with him at that time in the way of photographs. Mr. Snyder had these photographs

with him at that time. I found these various papers that I am referring to in our files at the office of Parkinson and Lane. I might say these photographs were taken out of that file by me for the Brooklyn Edison case and have been in the Broklyn Edison case since. I just produced them from our regular files. The photographs are those which I hold in my hand and are the ones that Mr. Snyder called the Siamese Twins that we prepared the application on.

(Photographs referred to marked Plaintiff's Exhibit 27-1, 27-2 for identification and received in evidence.)

[Nr.] Snyder explained that structure to me at that time. Mr. Snyder described this machine to us, to you and myself, and pointed out that it was a smooth walled, plain aluminum tub and there were two tubs hitched together in which he was going to drive them from the same shaft. You pointed to this photograph and you said to Mr. Snyder "Is that machine satisfactory" and Mr. Snyder pointed to this one of the two photographs which shows the machine with the two lids open and the agitator at the top and said "the Maytag Company won't let me depart from the type of machine which has projections that drag the clothes back and forth in the water or some positive movement by other materials of the clothes through the water" but he said "I have made
848 a machine that in my opinion beats this all hollow" and you asked him to tell you about that machine and he said that that machine that he had made the previous spring, which would have been the spring of 1920, had an impeller in the bottom of the tub with ribs or blades upstanding and when that was oscillated it drove the water laterally out at the bottom toward the sides of the tub, then up, then in and down and around and he used his finger to show the circulation and you asked him what kind of tub he had in that machine and he said a wooden tub and after that, realizing that I had to get the material for the patent application, it was up to me to be sure I had enough material to prepare the application, I asked him some questions myself and I said "you said that you used a wooden tub in that machine you built in the spring of 1920". He said "yes, but that is not the kind of tub that I intend to use when I put the machine out on the market". I said "what kind of a tub do you intend to use" and he pointed to the tub of the machine in these photographs that were laying on your table and he said "I am going to use a plain aluminum tub like that except"—and then he pointed to the bottom where the base of the cone, inverted cone is, and slightly small, and he said "I am going to make that flat face larger to accommodate the propeller

so that the propeller will have room to be in the bottom of the tub but the edges be spaced inwardly from the sides of the tub far enough to give room for the turn-over of the water and clothes.' Then I said to him "How are you
849 going to drive it, from the top or bottom"—because I knew that application would come in from what he said sooner or later and I would have to prepare it so I wanted to find out something about it. I said "how are you going to drive it? From the top or the bottom" and he pointed to the drawing of the other application that we were discussing at the same time in connection with an amendment that had to be filed in the patent office and he pointed to the drawing in that application which was also lying on your desk at the time and he says "that is the way I am going to drive it, at the bot om with a rack and pinion driven from a motor through suitable gearing."

I have got the drawing of that application I refer to here. That is the application in the name of Howard F. Snyder, Serial Number 137,528, for washing machine. That resulted in a patent. The patent that issued on that application is Snyder patent No. 1,391,214, September 20, 1921. This drawing was taken from the regular files of Parkinson & Lane. I worked on this application myself, but the amendment that was filed as the result of that interview, due to the fact that I was busy on other matters I had Mr. Blackburn prepare it under my direction. I had the supervision and handling of all of the work, subject to what conversations I had with you, of the Maytag Company with respect to washing machines during that period.

850 The custom of Mr. Maytag and Mr. Snyder was to see you and you would call me in your room, and if it was a matter Mr. Snyder wanted to take up that he didn't need to see you on he would come to my room.

When I came to you first I came directly from the United States Patent Office where I had been an Examiner.

(Plaintiff's Exhibit 28, a drawing, marked for identification and received in evidence).

Mr. Snyder said this machine I have just described was being put out, and it was being manufactured and put out. That is the Siamese Twin machine. The general custom of the Maytag Company was not to file an application until the machine was actually built in such a form of construction that they were willing to put it on the market. In every instance at that time they either offered a photograph of an actual machine or one of the actual machines itself. In every in-

stance I had occasion to prepare applications for them from the time I went there in 1917 and certainly until 1923 they either had a picture of the machine or one of the machines themselves which I inspected to make the drawings from.

Following that interview which took place, in your office, with Mr. Snyder, in January, 1921, the next interview I had with Mr. Snyder was on April 1st, 1921. My diary shows that Mr. Snyder was in and I had an interview with him. The entry reads "Maytag Company, hyphen, to interview with Howard F. Snyder in re various new patent applica-
851 tion matters." And that is dated April 1, 1921. I am taking that from one of my actual records in that diary.

I was very much interested in the different forms of machines. So I asked Mr. Snyder again about the machine with the impeller in the bottom that he said had a wooden tub, I asked him how he liked it and he said it did fine, "but I am going to make one with an aluminum tub," he says, "I am working on it and will put one out with an aluminum tub in the immediate future". We took up various pending application matters on that occasion. I haven't the files here but it was these various matters that were pending then. The conference of April took place in my room in Chicago.

My diary shows the next conference with Mr. Snyder to be October 18, 1921. Under date of October 18, 1921, I have an entry reading, "Maytag Company, hyphen, to study of various patent matters and interview with Howard F. Snyder in connection with same." I reminded him at that interview that he said he was building one of these underwater action washing machines that would have an aluminum tub and I asked him if he had, and he said yes he had one then constructed and it was in operation. He mentioned some woman's house, but I don't recall the name, some washer-woman.

According to my diary the next interview with Mr. Snyder was January 13, 1922, and that occurred in your room. The entry reads, "Maytag Company, hyphen, to services
852 with Mr. Lane in re interviews with Howard F. Snyder and E. H. Maytag". The date of that was January 13, 1922. On that occasion we again asked him about that machine because you and I both were following it up in our conversations when he wasn't there at different times, wondering how he was coming along with it and we asked about the machine, and he said, "I have got it ready to put out and I have got F. L. Maytag's consent to put it on the market".

He said, in connection with what had previously been the disposition of Mr. Maytag concerning this kind of machine that he had gotten F. L. Maytag's consent, that Mr. Maytag wouldn't let him put out this machine before that because it departed so in washing principle that he was afraid it might be so radically different it might upset the trade. But he had finally, just a short time before that, that fall I think he said, gotten Mr. Maytag's consent to go into production on it. He said—and you, yourself, brought the question up at that interview—he spoke of some machine they had put out years before that that wasn't in proper condition to go on the market, and they had a good deal of trouble with it. He laughed and said, "Yes, that was one thing that made Mr. Maytag so conservative about putting out this new machine".

The next time I met Mr. Snyder was April 26, 1922. It is in my diary. I have the entry, which reads as follows: "Maytag Company, hyphen, to interview with H. F. Snyder in re new machine." That referred to the water action
853 machine in which he had put the impeller in the bottom, with the upstanding ribs or blades.

That is the same machine concerning which he had talked to me since 1921, and on that interview he had one of those machines right there in our office. We operated it. He demonstrated it to yourself and myself. Mr. Snyder had us put water in the machine, the machine being in construction the same as it was filed in the patent application. That was in the office of Parkinson & Lane. It was neither in Mr. Lane's room nor in my room. It was in a sort of a hallway where there was mc: e room. He had us put water in it. We started it up. He says "In order to show you how safely you can wash delicate fabrics such as lace curtains and the like, I am going to put in toilet paper", and he put in two or three one dollar bills and he put the toilet paper in and operated the machine. He said, "Watch it as it goes around". He pointed out to us the circulation in the tub and showed us the toilet paper going around, and with that he says, "I want you to notice as that toilet paper comes down the blades on the propeller do not tear the toilet paper; they give it a push outward without tearing the paper." I examined the paper after watching this operation. Outside of being soaked that way, its condition was very good; it was not chewed or torn up. After that the draftsman immediately made the drawings for that patent application; right from that machine that was there in the office.

854 I see here substantially the same kind of machine I had there at that time. It is this machine here; Plaintiff's Exhibit 9.

Mr. Bisson prepared the application. You told me to turn that over to Mr. Bisson and let him prepare it and discuss it with both yourself and myself after he had it prepared. He went to work May 8th, 1922, and that is the first job he was given to work on, the application for that machine, the drawings having been prepared in pencil in the meantime. The time that elapsed between that and the filing of the application on June 12 was used in the preparation of the application, submitting to the inventor for his signature, and so forth.

I am familiar with Mr. Snyder's signature; I have seen it many times. That is Mr. Howard F. Snyder's signature on the last two pages at the back of that letter, Plaintiff's Exhibit 25. I recognize that. He had occasion to sign various application papers that I prepared for him. As to the letter itself, dated December 9, 1919, addressed to the Maytag Company and on the letterhead of Parkinson & Lane; the signature on that is your name. I signed that letter for you. That is my handwriting. I recall the signing of that letter, and the sending of it. That has the initials there in the lower left hand corner that we use on all letters. The initials are "LFM" and the "L" stands for "Lane" and the "FM" for "Fred Mason". That indicated it was your business as distinguished from Mr. Parkinson's business.

855 I recall this particular situation. This is a letter on the results of a search we made for the Maytag Company to obtain copies of patents on mangles or ironing machines, and this is the report we gave them in which we listed the patents we found on mangles, and sent them a copy of them. Mr. E. H. Maytag was so busy that when he would get letters he would turn them over to Mr. Snyder for attention if they had to do with patent matters, and Mr. Snyder would come in later and discuss those matters with me.

These diaries and papers I have referred to are in my own handwriting. That is, the diaries were kept by me personally in my own handwriting; entered at the time. The entries were made on the day of the entry entered in that space. That is, at the end of each day I would make my entries for the day. That was my regular practice.

I do not think I mentioned the patent that was taken out on the Siamese Twin, and I also have the patent that was taken out on the cylinder machine that I went down to the Colliseum to see and Mr. Snyder was explaining to me the first time I met him. The first patent is the Dremel patent, No. 1,417,306, patented May 23, 1922, on an application filed

February 11, 1918. That was after my interview at the Coliseum. And this is the patent on the Siamese Twin he was explaining to us from the photographs here on January 21, 1921. That is Patent No. 1,644,959, application for which was filed June 16, 1921.

856 Patent No. 1,391,214 was the patent he referred to that shows how he was going to have the under-tub-drive drive it from the bottom. We were working on that that day in your room. That was issued September 20, 1921, but the application was filed December 18, 1916. We filed an amendment immediately following that interview in February.

(Plaintiff's Exhibit 29, copy of Dremel patent 1,417,306, marked for identification and received in evidence.)

Cross-Examination.

By Mr. Bristol:

Q. Have you recently made a thorough search through all of the records in the Parkinson & Lane office for anything bearing at all on the patent in suit so far as date is concerned?

A. Well, you say "made a search to locate everything". I have gone through my diaries to locate dates of the interviews I had with Mr. Snyder, and I have gotten the copies of these patents and these figures I got out of the file on that January 21, 1921, date. I have made a search to get everything I thought would help me on these matters; yes.

Q. Did you make a search to get anything that you thought might hurt you?

A. I naturally was not looking for that, but there was nothing I found that I would have been at all afraid to bring along.

857 I do not believe I said I ever saw a photograph of the machine of the Snyder patent in suit. I do not remember such a photograph in our file. I can honestly say I am not concealing one. I have not produced any photograph of that machine here, and I do not think I ever saw one. We prepared the application directly from the machine itself.

The name of the draughtsman who made the drawings was John Enders. He is not in our office today; he is dead; he died several years ago. The instructions I gave him with regard to making the drawings were such as we always give the draftsmen of the ability of his. He was a very fine draughtsman. I would show him the machines and tell him to make such views as would best portray the machine. I knew I could trust him on that because he was very success-

ful in picking out the good views to show the structure; with the further admonition that we give other draftsmen not to have an unnecessarily large number of sheets.

Q. Would you give the words in which you conveyed those instructions to him. A. I expect I could.

Q. Do you have a distinct recollection of what those words were? A. Yes.

Q. Please reproduce them?

A. "John, here is the Maytag machine. We have to prepare a patent application on it. I want you to make the drawings. Here is the machine; take all the time you want
858 to study it, make up the views you think are proper to bring out the structure of the machines, and make the drawings in pencil but do not ink them in; bring them to me in pencil first, because I do not want them inked in until after the specification is ready and prepared."

Q. Have you any distinct recollection that those are the words you said, or are you just putting those words together as probably representing something that you most likely would have said under those circumstances?

A. I wouldn't say that I positively used an "A" in the sentence, or "the" in that particular place, but that is the substance of what I told him.

Q. When you were reproducing the exact language you did not include any reference to an admonition against too many figures just now. Did you or did you not say that to Mr. Enders?

A. I am quite sure I did, but you said "figures". No, I never admonished him not to put in too many figures. I was talking about number of sheets.

Q. In your answer that you just gave me now when I asked you to reproduce the words you used, you did not have any reference to an admonition against too many sheets, did you?

A. I will have to have the reporter read the answer over to me.

(Whereupon, the answer quoted on the previous page was read by the reporter.)

859 A. No, I didn't say anything to him there about making too many sheets.

Q. Now, the question is, did you or did you not in April, 1922, say to Enders, "Don't make too many sheets of drawings"?

A. I am quite sure I did, but he and I had worked together so long he knew I was thinking it because I had said it to him so many times, to keep the cost of drawings down,

and the Patent Office doesn't like to make more prints than they have to, that runs up the Government expense.

I referred in my direct testimony to a rather heavy file of a Patent Office application. That was the file of the Siamese Twin washer with the two tubs. The first date that shows on the jacket of that application is January 20, 1921. That is not the filing date. That is the date the girl enters the docket number in her records. We had previously had a letter from Mr. Maytag dated January 3rd that they were coming in. We gave that to the girl and from that, within a few days or whenever she could, she would make the docket; then we would have that for the papers that had come in previous to that time.

The date for the opening of that docket shows here on the file January 20, 1921. That was the day before the interview. Papers in that file dated January 20, or prior to that are that letter from Mr. E. H. Maytag, dated January 3rd. There are no other papers prior to January 20th. The last date that anything was entered on the jacket of this file would be the date this patent was delivered to the Maytag Company.

860 Q. Without looking at that date, have you any independent recollection of when that was?

A. No, sir; except I know it was November, 1927. It is right here on the file.

Q. That is, after looking at the date you know that?

A. Yes, sir.

Q. You haven't any independent recollection, have you, as to the date when that patent was delivered to the Maytag Company?

A. No, sir, except from my record. I would have to take that from my record.

I can't tell you what happened on May 28, 1925, in connection with this case. I can't tell you what happened on June 8, 1923.

Q. In other words, you have no independent recollection without reference to this record of the date of any particular happening in connection with the matters pertaining to this file, have you?

A. No, sir; except I have these dates in my diary and know they are correct, and the dates of the interviews I testified to.

Q. Now, even as to those diary entries you have no independent recollection of date, have you, aside from the diary?

A. I refreshed my recollection, Mr. Bristol, from the diary, yes, sir, that is correct.

Q. Then before you refreshed your recollection by looking at the diary did you have any independent recollection as to the particular dates?

861 A. I certainly have a very strong recollection as to what happened at those times, but as to the date I am frank to admit I would have to get that from the diary.

Q. Your answer included reference to a recollection of what happened at those times. You really mean you have a recollection of something happening but you do not have or did not have before looking at your diary, a recollection as to just when it happened?

A. That is right.

Q. And that is true with regard to all the matters to which you have referred, without looking at your diary, isn't it?

A. Yes, sir, except I recall very distinctly that I had that first conversation with Mr. Snyder the first time I ever met him. Now, as to when that first time would be I would have to get that date from my diary.

Q. And if you did not have the diary you could not fix that date at all, could you?

A. I probably could not exactly; I could give it to you roughly but not exactly.

Q. From the time you joined the Parkinson and Lane office in April, 1917, until the application for the Snyder patent here in suit was filed, how many times did you see Howard F. Snyder?

A. Well, I have referred here in my diary to quite a few times.

Q. Just a moment, won't you see if you can't answer the question first.

862 Mr. Lane: What is the question. Let us see if he has answered it first.

(Last question and answer read by the reporter.)

Q. Can you answer the question?

A. No, sir, not if you want a precise number of times. I would have to go by my diary as to the times I have referred to. I might have seen Mr. Snyder a few times in addition to that; I might have met him on the street there in Chicago or at the hotel or something.

I remember one time very distinctly I saw him. That was in the Great Northern Hotel in the dining room. I could not

give you the date. The year was, I would say, 1921. As to what part of the year, well, I have no entry made in the course of business; I could not give you that date, Mr. Bristol. I have no independent recollection, because that was just I happened to meet him and I had no occasion to enter it in any of my books.

Q. Now, how many other times did you meet Snyder, between your first meeting with him and the filing of the application for the patent in suit?

A. I could not give you the exact number, Mr. Bristol. I might meet him going out from Mr. Lane's office and shake hands with him in the hall but I could not tell you exactly to answer your question.

Q. Give me your recollection of anything that was said and done between you and Mr. Snyder at other meetings than those you referred to on your direct examination?

863 A. Yes, sir, I can, and it brings quite some regret to my mind to do it. He told me about trouble he was having with ulcers of the stomach and he had medicine there that he took before we ate our dinner and he told me that doctors told him he would have to be very careful and were prescribing medicine for his stomach ulcers.

Q. And that was what occasion that he told you that?

A. That was the occasion I had lunch with him in the Great Northern Hotel and he told me that many other times, too, but I remember distinctly his telling me that time and he took his medicine right there at the table.

Q. Did you have lunch with him on other occasions?

A. I might have; I don't recall off hand now but I do distinctly remember that one.

Q. Won't you search your recollection and tell me whether in that period from October, 1917, to June, 1922, you had lunch with Mr. Snyder on any other occasions?

A. Well, I cannot recall any other times, so I am sure if I would search my recollection it would not enable me to make any better answer. I remember that one time but I don't remember any other time.

Q. What was the occasion for your having lunch with him at the Great Northern Hotel?

A. Well, one occasion was that we were over there and hungry and it was time to eat, it was lunch time, so we went down to the dining room.

Q. Were you and he out together somewhere?

A. I think it was the day that he was in on January

864 21, 1921, telling us about this Siamese Twins. Mr. Lane probably was with us; I am not sure about that.

Q. Don't you think it is more likely that that occasion was the day that you saw him on October 18, 1921?

A. No.

Q. Wouldn't it be January 13, 1922? A. No.

Q. How about April 26, 1922?

A. Because it was cold weather; the weather that time was not April weather.

Q. It was cold weather then was it?

A. Yes, sir.

Q. You saw Mr. Snyder in January, 1922, didn't you?

A. I did, yes, sir, on January 13 in Mr. Lane's room.

Q. And you also saw him in 1921, didn't you?

A. Yes, sir.

Q. And in January of 1921?

A. Yes, sir.

Q. What date? A. January 21st.

Q. What was the date of your meeting with him, and your having lunch with him at the Great Northern?

A. That I have just referred to?

Q. Yes.

A. My recollection is it was the same day that he was in our office, January 21st, and that we had been together that morning and went out to lunch together.

865 Q. But your diary says that he was in your office or in Mr. Lane's office and you were there on January 13, 1922? A. That is true, yes, sir.

Q. How do you identify which one of those occasions connects up with the Great Northern lunch?

A. Because on the January 13, 1922 date Mr. E. H. Maytag was with him and I am quite sure I did not go to lunch with him that day because E. H. Maytag was not along at this lunch time I am talking about.

Q. You did not mention Mr. E. H. Maytag, on your direct examination, as being present at that interview, did you?

A. Yes, sir; I thought I did; I go by the record on that; I thought I said Mr. E. H. Maytag was there.

F. L. Maytag is dead. E. H. Maytag was still living the last I heard. I know about E. H. Maytag's being alive I would say within the last couple of weeks or so.

Q. Please tell us again what occurred at that meeting on January 13, 1922 in Mr. Lane's office?

A. Mr. E. H. Maytag and Mr. Snyder came in, because they realized they were getting very close to the time when they would have to file an application for patent on this underwater impeller machine, which for brevity I will refer to as the Gyrafoam machine, and they wanted to talk it over

with Mr. Lane and impose upon him the seriousness of getting the application filed carefully and have him to give it his own personal supervision and Mr. Snyder told us
866 at that occasion "I have got F. L. Maytag's permission to put it on the market." Mr. Snyder knew that he had told Mr. Lane and myself many times that F. L. Maytag would not let him put it on the market.

As to the attitude of Mr. Snyder on that occasion, Mr. Snyder was always one of the most pleasant individuals I have ever met and it included that occasion. I would say to anyone that knew Mr. Howard F. Snyder he was acting natural, he was himself and that means in good spirits and cheerful and happy. I would not say there was any difference noticeable between his attitude on that occasion and his attitude at previous interviews; he was always good natured.

Q. Now, will you reproduce as nearly as you can, his exact words on that interview?

Mr. Lane: What date is this one?

Mr. Bristol: This is the interview of January 13, 1922.

A. He said "I have got that machine ready to go on the market and I have got F. L. Maytag's permission to put it on the market".

Q. Is that substantially his exact language?

A. That is the substance of what he said, in his language as near as I could put it.

Q. He had nothing more to add to that?

A. Oh yes; he talked about quite a good many things at that interview.

Q. Didn't you testify as a witness for the plaintiff in the case of Maytag versus Brooklyn Edison?

867 A. Yes, sir.

Q. And about what time did you testify, what year and month?

A. It was around about the first week in May and I would put the year at 1935.

Q. Now, can you reproduce for us the exact words that you ascribed to Mr. Snyder in your testimony at that time?

A. No, sir. The substance was the same as I have given you now; the words might not have been exactly in the sequence but that is the substance.

Q. Didn't you testify in that case, and I am referring to page 2070 of the Brooklyn Edison record: "Mr. Snyder,—meaning Mr. Howard F. Snyder—was very enthusiastic that morning and he said to Mr. Lane and myself, he says 'I've got it'. We said, Mr. Lane said 'Got what'? He says 'Got

that machine I have been telling you fellows about for a long time' " Did you so testify?

A. If that is in the record I evidently did and I did it with the utmost care and good intentions; yes, sir.

Q. Now, will you just look at the record in that case?

A. Yes, sir, I have it in front of me.

Q. Does that refresh your recollection?

A. Yes, sir, that is evidently what I said at that time.

Q. And was that true at the time you said it?

868 A. Yes, sir, it was true in substance as near as I could remember his language. He did go on—that was quite a long interview; he went on and told us in addition to what I said there that he had got it ready for the market and that he had got F. L. Maytag's permission to put it on the market. He said all those things that I have said; whether they were all in the same sentence or different sentences they were said at that time.

Q. Well, in response to my question about his attitude you seemed to think today that his attitude was not different from his attitude at any other time?

A. He always was that way, always enthusiastic.

Q. Your testimony in the Brooklyn Edison case indicated that he was especially enthusiastic on that particular occasion, did it not?

A. I don't remember what I said there but he was always very enthusiastic and he might easily have been a little super-enthusiastic at that time.

Q. What is your memory of it?

A. Well, my memory was that he was feeling pretty good.

Q. He thought he really had something that day, did he?

A. Well, he said he had it ready for the market and he had F. L. Maytag's consent to put it on the market; I knew about his having it because he had talked to me so many times before about it.

869 Between October, 1917 and June 1922 I worked on quite a good many matters for the Maytag Company during that period but I could not tell you the exact number. It would be more than five. I would not think as many as fifty. You are talking about patent application matters in the patent office, not matters for the Maytag Company. I may have worked on fifty different matters for the Maytag Company but do you mean patent application matters or anything?

Q. Well, tell me what kind of matters were you working on for the Maytag Company in that period of time?

A. I was working mostly on patent application matters in the patent office but Mr. Lane would give me matters to

work on quite frequently, looking up details for him and report to him on it, whereas he would report to the client.

Q. Taking those all told together, how many different matters did you work on for the Maytag Company in that period of time?

A. I would not attempt to say, Mr. Bristol; I could not say; I could not remember.

Q. It was at least fifty, wasn't it?

A. I would not be able to say whether it was or not; I don't think it was.

Q. How many applications for patents were filed on behalf of the Maytag Company during that interval?

A. I don't know. I didn't think you would ask me that or I would have been delighted to have looked up the information and brought it with me but I don't remember.

870 Q. Was it a large number or a small number?

A. You said patent applications filed?

Q. In the United States, for the Maytag Company, during that period?

A. During that period, I would say it would be a reasonable number, not a large number, a small number.

Q. Ten, fifteen?

A. You mean new applications or amendments that I worked on?

Q. I mean new applications or divisional applications or continuing applications, not merely amendments in pending applications?

A. Well, I don't remember, Mr. Bristol. I would have to go to the records for that.

Q. Did Mr. Snyder use the word "dolly" in referring to any of the ideas, any of the matters that he discussed with you?

A. Well, that is a broad question. You say any of the matters he discussed with me. He did have some dolly machines. If he was talking about that machine he probably used the word dolly but not when he was talking about the under water machine; he did not call that a dolly in my presence.

Q. Could you tell us the term that Mr. Snyder used, if he used any, in referring to this implement at the bottom of the tub shown in Plaintiff's Exhibit 28 bearing the reference numeral 25?

A. I think he called that a dolly.

871 Q. Did you ever see any machine or did Mr. Snyder ever tell you about any machine of this general type shown in Plaintiff's Exhibit 28 with a wooden base under the dolly?

A. No, sir, not that I recall, not of that type structure.

Q. Well, now, do you differentiate in that respect between the structure shown in Plaintiff's Exhibit 28 and the structure shown in the photograph, Plaintiff's Exhibit 27-1?

A. Yes, sir; I differentiate there because I understood your question to mean this particular structure of dolly.

Q. All right. Now, will you answer the question with reference to a dolly structure such as is shown on Plaintiff's Exhibit 27-1?

A. You mean this one? Yes, sir, that has a wooden base on that one. This is quite different from that, in construction (indicating).

Q. Did Mr. Snyder ever talk to you about a dolly structure with a wooden base mounted at the bottom of the tub, illustrated in Plaintiff's Exhibit 28?

A. Mr. Snyder never told me that he had put a dolly of the shape shown in this exhibit in the bottom of the tub, no, sir.

Q. What did he tell you about the shape of the dolly that he had put in the bottom of the tub?

A. Well, he told me that he had a round wooden base with upstanding blades on it in that wooden tub machine he made in 1920 but that was not of this shape.

872 Q. Well, the difference was primarily between the square and the round wood base, wasn't it?

A. Oh, no; as I understood it, the difference was much greater than that.

Q. Is that all you ever heard from him about a dolly mounted in the base of machines?

A. No; he told me that he had mounted dollies in the base of machines before that, before the 1920 one he was talking about.

Q. Before the 1920 one?

A. Yes.

Q. Did you find any records in the Parkinson and Lane office about that?

A. No, sir.

Q. Did you hunt for any?

A. I did not. I looked for everything I thought I was going to use here but I did not look for any—what do you mean —what would they be? What kind of records? Do you mean dollies themselves or photographs or what?

Q. Letters or sketches or any material?

A. No, sir, I didn't look for anything like that, Mr. Bristol, before I came down.

Q. But Mr. Snyder told you, did he, that even earlier than 1920 he had mounted dollies in the bottom of wash tubs?

A. You are excluding this machine are you? This, you see, is down toward the bottom with the pegs standing up,

referring to Plaintiff's Exhibit 28, this was what you might call in the bottom of the tub.

873 Q. Was that what Snyder told you about?

A. On what occasion?

Q. Any occasion?

A. Yes, sir, he told me about this machine.

Q. You made a remark a few moments ago that Snyder had told you about mounting dollies in the bottom of tubs even prior to 1920. Now, just what was it he told you about that?

A. Well, he told me that he had tried dollies in all kinds of different ways, he told me [—] had tried them in the bottom of the tub. When I say dolly I do not mean the milk stool type with the round peg, I mean the type with the flatter blades.

Q. Agitators?

A. Yes; he said he had tried those and he had even tried the round peg but what he was talking about at the time was dollies in general, putting them at different places in the tub without specifically saying what their shape was.

Q. What was the character of the tubs that he put them in?

A. I don't know, Mr. Bristol; he was telling me about his doing that at different times but I didn't see him do it.

Q. Did you prepare a preliminary statement for Mr. Snyder in connection with an Interference between the application for the patent in suit and an application for patent of a man by the name of Unruh?

A. I either prepared it myself or it was prepared under my instructions, yes, sir.

Q. Do you remember what date of alleged invention was set up for Snyder in that preliminary statement?

874 A. You said "date of alleged invention". In a preliminary statement there are several dates that go to constitute invention. Which one do you mean?

Q. Tell us if you can remember what the earliest date asserted in that preliminary statement was?

A. As I remember it, it was 1915.

Q. And on what evidential matter was that preliminary statement based when you prepared it?

A. Well, Mr. Snyder and I sat down and had a talk, a very careful talk and I explained to him that the preliminary statements had to be filed in that Interference and that under the practice in the patent office he should set his date as early as he could hope to prove because if you can prove an earlier date than you allege in your preliminary statement you do not get the benefit of it, they limit you to the date in your preliminary statement so he and I talked over the various

previous conversations we had had and we referred to the conversation that we had on October 30, 1917 at which he explained to me that he was working on washing machines with an impeller in the bottom, with upstanding blades or vanes that would oscillate and throw the tub in the circular paths we referred to—

Mr. Lane: The water you mean?

A. The water in the circular paths and I said "that is fine" I said "that certainly is a conception—I mean a date of conception and disclosure to me of the broad counts in this Interference". "Now" I said "you can certainly go
875 back that far on your date." I says "If you have got anything else" and I asked him very carefully to look as carefully as he could to find everything that he could find on that, I says "We should set up the earliest date in this preliminary statement" so he made a very careful search and I took his word on whatever he set up back of 1917, that I knew of my own knowledge but not back earlier.

Q. Did he bring in to you any documentary evidence to show you in connection with that preliminary statement?

A. No, sir, I don't believe he did, Mr. Bristol.

Q. And there has not been any produced here so far as you know, has there?

A. You mean documentary evidence that goes back of October 30—

Q. Of the filing date of the Snyder application?

A. Documentary evidence that goes back of the filing date? Well, I must admit I do not know what all the exhibits are in this case, Mr. Bristol; I am not actively working in it. The record will show that.

Q. Do you recall that that preliminary statement asserted that the invention was first successfully operated on January 27, 1915, and that the invention was reduced to practice on January 27, 1915?

A. I think I do remember that; yes, sir.

876 Q. And you accepted Snyder's statements as to his having accomplished those results that early?

A. Yes, sir.

Q. And about when was this preliminary statement prepared?

A. Well, it was prepared at the logical time it would come in the proceedings, but if you are asking me the date I couldn't give you that without refreshing my recollection on that.

Q. You do not know what year it was?

A. Off-hand, I couldn't say.

Q. It would be only a guess, wouldn't it, if you did say?

A. Well, if I could take time and the trouble to figure it out but off-hand I couldn't give it. I would rather not try; I might get it wrong.

Q. Will you go back to your diaries, please, and read me anything from the diaries which gives you any clue as to the subject or subjects which were taken up with Mr. Snyder at the interviews indicated? Take first October 30, 1917.

A. That says, "Time spent with Mr. Snyder in going over features of new cylinder washer".

Q. That gives you a pretty complete memonic, doesn't it, as to the subject of your conversation?

A. I must admit, Mr. Bristol, I do not know what the word means.

Q. Reminder.

A. My reminder there, my positive knowledge of what we talked about that date was because of my two trips to the Coliseum that same month, October 17 and Octo-

877 ber 18, to see the cylinder machine.

Q. But your diary entry does tell you what the subject for that conference was?

A. Yes, sir, by referring to "new cylinder washer".

Q. Do you find any reminder in connection with the entry that has anything to do with the machine of the patent in suit?

A. Nothing written in my entry; no, sir.

Q. Now, will you turn to your next entry. That was January 21, 1921, wasn't it? A. Yes, sir.

Q. What does that entry cover as the subject of the interview?

A. "Siamese Twins new patent application" and also "re various patent matters."

Q. The "various patent matters" had to do with what amendments you had on pending applications?

A. Yes, sir; there was one in particular due we had on this machine No. 1,391,214. That was up for amendment, and we discussed it at that time and filed the amendment the following month.

Q. The Siamese Twin application had nothing to do with the machine of the patent in suit, had it?

A. You say "nothing to do". I would say no in the sense that it was not the same kind of a machine. It had a smooth aluminum tub that he said he was going to use with modification at the bottom; but directly no, it wasn't the same machine as the patent in suit.

878 Q. In the Brooklyn-Edison case I believe you testified with regard to the January 21, 1921, interview

that Mr. Snyder assured you that the instruction for preparing a patent application on this under-water agitator would come in right soon; was that the fact? A. Well—

Mr. Lane: Have you got the testimony here, Mr. Bristol?

Mr. Bristol: Yes.

Mr. Lane: Show it to the witness, please. Here is the original copy of what he is referring to (indicating)

(Whereupon, the question was read by the reporter.)

A. It was the fact that Mr. Snyder told me that.

Q. And when did the instruction for preparing that application finally come in?

A. Less than a year later. If you want to know when, it was January 13, 1922.

Q. And the machine came in when?

A. Shortly before April 26, 1922. The machine had been over at the advertising office of Henri, Hurst & McDonald who were handling the advertising for the Maytag Company and they had had the machine sometime before we got it and they sent it to us from the advertising agency that I just referred to.

Q. Did you ever receive any drawings of that machine from the Maytag Company?

A. I think not, Mr. Bristol, I cannot recall. That is
879 prior to the time we had that machine. We worked directly from the machine itself.

Q. Did you ever see the machine which is in court here and marked Plaintiff's Exhibit 8A prior to the filing of the application for this patent in suit?

Mr. Lane: You better look at it there and see what he is talking about.

Q. Yes, by all means, do.

A. If you mean in the exact condition it is now I would say no, I have never seen it. I do not know what changes have been made in it but this machine as it stands right now —I am talking about this one does not look like that one. You can see the difference if you look. I don't remember seeing that machine prior to that date.

Q. And you are now referring to Plaintiff's Exhibit 8 A. Have you ever seen that machine, Exhibit 8A before?

A. I don't recall having seen it before, Mr. Bristol; I don't think I have.

Q. Did you look at any of the exhibits that were in court during the Brooklyn Edison trial or available for that trial?

A. I only looked at them generally. I did not study them because I had no connection with the legal counseling in that case; I was there as a witness and I did not study the various machines but I saw machines around the room.

Q. Was the machine which you have just looked at
880 among them?

A. I could not say, Mr. Bristol.

Q. The same question with regard to the machine Plaintiff's Exhibit 9 that you testified about in your direct examination, that is this next one here?

A. I would not say whether it was there or not; I don't remember. I saw a lot of machines there but I think that machine was there; I would not want to be positive; the record would have to show that.

Q. Will you give us Mr. Snyder's exact words or as nearly as you can remember them, at your meeting with him on October 30, 1917, concerning the oscillating impeller in the bottom of the tub?

A. He said "I am working on a new machine that will beat them all". I think his exact words were "it would knock them cold", his meaning was that it would beat them all and I asked him if that was a cylinder machine because we were working on a cylinder machine and I wanted to know whether it was the same type of machine. He said "no, it is a machine that has an impeller in the bottom of the tub with upstanding ribs or blades which, when the impeller is oscillated, will throw the water outwardly toward the sides of the tub, then up and in and down and so on".

Q. Now, did you testify in the Brooklyn suit that Snyder said "It is a machine that has an oscillating impeller in
the bottom of the tub. When the impeller is oscil-
881 lated it sets up currents in the water in the tub and washes the clothes by water action alone".

A. Well, if the court reporter got it down exactly as it is worded here in what you have handed me I would say yes, I said that.

Q. Did you testify in the Brooklyn Edison case to this matter which you have just previously mentioned of upstanding ribs or blades and currents that go in some specified direction?

A. From looking at this record that you just handed me I don't see that there.

Q. In other words, you have added something to your testimony in this case that you did not give in the Brooklyn Edison case?

A. Mr. Snyder said a good many things at that interview, Mr. Bristol, and what I quoted at Brooklyn in this

other case I did not purport to quote everything that he said during that interview and furthermore I did not, before coming down here to testify now, I did not take that record in the earlier case and try to memorize my testimony, so there may be little discrepancies in the exact wording that I give you and it may have occurred at a little different time in the interview than what I quoted down at Brooklyn.

Q. Now, as I understand your testimony today you met Mr. Snyder sometime after April 1, 1921 and as I understood your testimony you met him October 18, 1921?

A. I testified that the two dates I met him there were April 1, 1921 and again October 18, 1921.

882 Q. And following that what was the next occasion that you had an interview with him?

A. You mean following October 18, 1921?

Q. Yes.

A. January 13, 1922, that is the time Mr. E. H. Maytag was there.

Q. Didn't you testify in the Brooklyn Edison case "The next time following April 1, 1921 that I had an interview with Mr. Snyder was January 13, 1922", and I am referring to page 2069 of the Brooklyn Edison record?

A. Yes, sir, and that is something that I would like to correct right now because my diary shows that I had the interview with him October 18th. I evidently overlooked that in the Brooklyn testimony but it is here in my diary if you wish to see the entry.

Q. Now, you have here testified, haven't you, that on October 18, 1921 you reminded Mr. Snyder about the bottom agitator machine and asked him how it was coming; you so testified here today, didn't you? A. Yes.

Q. And you did not mention that October 18, 1921 session at all in the Brooklyn Edison case did you?

A. I evidently did not. I must have entirely overlooked that entry in my diary because apparently I did not refer to it at that time.

Q. So that at the time of the Brooklyn Edison case you had no recollection of any interview with Mr. Snyder on October 18, 1921?

883 A. No, it did not occur to my mind at that time; in other words, I overlooked it.

Q. Now, just read me again, please, your entry in your diary under October 18, 1921?

A. October 18, 1921, that is the date you asked for?

Q. Yes, please.

A. "Maytag Company, hyphen—study of various patent matters and interview with Howard F. Snyder in connection with same."

Q. Do you find any reference in there to anything about a bottom agitator machine? A. No, sir.

Q. What is it that now refreshes your recollection and which did not refresh your recollection when you testified in the Brooklyn Edison suit?

A. I seem to have entirely overlooked that October 18th date, Mr. Bristol, in going through my diary down there.

Q. Now, in any of these diary entries that you have read, was there any single reference to a bottom agitator machine?

A. No, sir, I don't think there was, not even in the April 26th one. Wait, I would have to refer to that to see. No, that is correct. In the April 26th entry which was when we had the Gryofoam machine right in the office it just says "In re new machine".

Q. Does it say anything about the machine being in the office? A. No, sir.

884 I am quite sure Mr. Lane did not keep a diary during the period from 1917 to 1922.

Redirect Examination.

By Mr. Lane:

Q. Mr. Mason, Mr. Bristol has a way of asking a question conveying the impression that you did not look for any unfavorable material. I want to ask you whether I requested you to get everything, whether favorable or unfavorable, and produce it?

A. You did, yes, sir; and you had others working on that also.

Q. You did do that? A. I did; yes, sir.

I recall Mr. Snyder's conversation with us and Mr. Maytag's conversation with us relative to the importance of this particular matter. Mr. Snyder said that this new machine departed in washing principle from the machines then on the market or theretofore known, as far as he knew, and that it was an exceedingly important application and he wanted us to take every step possible to get adequate patent protection. He made some comment about your doing work on that; he said he wanted you to personally supervise all the work that was done on that application.

There was not any occasion later to ever prove the 1915 date in the preliminary statement in connection with the Unruh Interference because we, in the Interference, relied on our record but due to Unruh's date being later than

885 Snyder's record date, we did not have to go into any proof on that. By record date I mean the filing date of his application. That is, Unruh had not alleged a date of conception as early as we had actually filed.

Recross Examination.

By Mr. Bristol:

Q. After these very specific instructions from Mr. Snyder for the best work on the application, who was it that was assigned in the Parkinson and Lane office to prepare it?

A. Mr. Bisson but he had—

Q. (Interrupting) Just a minute. That was the first job he did in the Parkinson and Lane office, wasn't it?

A. Yes, sir.

Mr. Bristol: That is all.

Redirect Examination.

By Mr. Lane:

As soon as he prepared the original draft he took it up with you and went over it very carefully with you, not only once but two or three times. I worked on it with you on that occasion.

Mr. Lane: Mr. Mason referred during his evidence to the Snyder patent Number 1,391,214 showing the gearing beneath the tub and I now offer that as Plaintiff's Exhibit 30.

(Patent No. 1391214 marked Plaintiff's Exhibit 30 for identification and received in evidence.)

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886 ROY A. BRADT, called as a witness on behalf of the plaintiff, in rebuttal, having been previously sworn, further testified as follows:

Direct Examination.

By Mr. Lane:

I have read over my testimony when I was on the witness stand, in typewritten form. I have found something there that I want to make a change in. There is one place where I misunderstood the question. It is on page 212 of the copy of the record that I saw. The question was asked me "That is you would have brought it here if it was favorable to you and left it at Newton if it was unfavorable." That is the question that I misunderstood. I do not want to give the impression that I have neglected or failed or would leave any of the records, regardless of what the circumstances were. Mr. Lane asked me to bring all of the material here that would be needed in this case regardless of its nature and I think and I thought at that time that I had done that. That is the reason that I asked for the correction.

I have here the cards of employment kept of the various employees who have testified, Mr. Miller, myself, Mr. Mooar, Mr. Stephen and Mr. Thornton. I got those from the records of the company.

First is the record of Joe Stephen which shows that he went into the employment of the Maytag Company on the 20th of August, 1908 and he is still in our employ. There is nothing on that record to show the time he was out in the Navy; that shows continuous record.

George L. Miller began his employment on December
887 1, 1919 and shows his employment continuous to the present time. I was unable to find the record prior to the time when he went to Colorado for his health but I find in the check books and the check registers where checks were issued to him prior to that time. I find the date of his re-employment, as December 1, 1919. This record shows that he was transferred to the experimental department on the 13th of May, 1920. Between those two periods, after he came back there, and the 13th of May, 1920, I believe he had charge of the transportation.

My next record is of Charles V. Thornton. It shows that he was employed on the 26th of March, 1919 and left the employ on October 15, 1920. That is the Mr. Thornton that testified this morning. I was not here when he was testifying. I produced it under the request of the other counsel.

David L. Mooar began his employment on January 22, 1917. It shows his employment up to December, 1934. That completes the list.

(Cards referred to marked Plaintiff's Exhibit 31-A, 31-B, 3-C, 31-D, 31-E and 31-F for identification and received in evidence).

I think I have a card of my own employment. It shows January 3, 1916 as the date that I entered the employ. That is all the entry there is because I have been in the employ ever since except the time I was out for the service.
888 In the instances where men were in the service they were not taken from the records.

Q. Now, Mr. Bradt, you have testified concerning the building of a machine by Mr. Snyder and explanations of that machine during May, 1920. What have you that enables you to fix definitely in your mind that particular date?

A. On the day that we were in the experimental department looking at this wood tub machine with the impeller in the bottom, as we turned and went back to his office he looked up at me and said "I understand you are going to join our ranks" and I said "well, I don't know what you mean" and

he said "well, I just happened to notice in the paper last night where J. M. Davidson's daughter had an engagement party and your engagement to be married was announced." I said "well, it looks like it, at last."

I have the original clipping of that date and a photostatic copy of the newspaper.

(Photostatic copy of newspaper clipping marked Plaintiff's Exhibit 32 for identification and received in evidence).

That same material was before Judge Byers in the Brooklyn Edison case.

Q. What other events do you associate in your mind that helps you fix the date of seeing this machine in operation in May, 1920?

A. Another thing that recalls it to my mind is the transfer of George Miller to that department.

I knew about the transfer at that time. The first work
889 I saw him do there was working on this machine.

Q. And that was how long after his employment there?

A. From the 13th to the 21st; I saw him on the 21st.

I have, at your request, made very careful examinations of our records of the Maytag Company.

Q. Can you state the habit that Mr. Snyder had in regard to sketches and things of that character at that time?

A. Well, he very often made sketches and signed them and dated them.

Q. Since you were on the witness stand in the Brooklyn Edison case have you had occasion to run across any additional information that seems to have a bearing on this question of dates of this gyrator type machine? A. I have.

Prior to the Brooklyn Edison case I made a very careful and very thorough search of all of the records in the office of the experimental department. Since that time, as of June this year the experimental department, under a new factory manager, was all torn up, the entire shop was torn up and the offices and the drafting department and I was in the new arrangement of the department about the fore part of July of this year, 1937, and in the back of the main office in which the drafting tables are I found an old box back in
890 the corner with some rolls of blue prints and things lying on it and I got into the box; the box was, I would say, about 12 inches wide, about 6 inches high, and about 18 or 20 inches long with a light wood board nailed on the top

and the nails were protruding at both ends as though it had been opened sometime recently. I looked in the box and I found there some pieces of brass rods and some steel drill rods and I found there a long piece of leather about 15 inches long with some holes in it, looked like some washers or gaskets had been cut out and on the bottom was a manila folder and I looked in the manila folder and found some drawings bearing Snyder's name and some dates. These documents were drawings, free hand sketches that he had made of different machines.

Aside from the drawings of machines in that folder there were a couple of sheets of drawings of a house or a residence showing the room arangement, floor plan of a house. I have here the various documents I found in that box with the exception of the drawings of the floor plans of the house.

The first one is a three page letter from Parkinson and Lane dated December 9, 1919 directed to the Maytag Company for the attention of E. H. Maytag. It has to do with a patent search on ironing machines for home use and on the back of the third page and on the back of the second page are sketches. Those sketches are in duplicate; the second one is apparently a carbon copy. Signatures of Howard Snyder and D. L. Mooar are on that document. December
17, 1919 appears in connection with Howard Snyder's
891 signature and December 19, 1919 in connection with
D. L. Mooar's signature. I know the signatures of both those parties. They are the signatures of those parties. The document I have just referred to is marked Plaintiff's Exhibit 25.

Another drawing I found there is a sketch dated February 26, 1920 signed by Howard F. Snyder.

Another is a drawing signed by Howard Snyder dated January 21, 1920. It has no name but I recognize it as a washing machine to hang on the inside of a bath tub; also an article dated January 11, 1922, entitled "Insect Gatherer and Collector" signed by Howard Snyder; another sketch signed by Howard Snyder dated December 15, 1918, which shows a cylinder type washer mounted on the stand and operated by a motor. Here is an envelope from "World Trade Club" addressed to Mr. Snyder bearing a postmark of April 30, 1919, inside of which are some circular matter. The envelope has been cut open and a sketch signed H. S., December 15, 1919, and initialed D. M. Those documents are in just the same condition as they were when I found them this year.

Q. What is there, if anything, on that drawing, Exhibit 25, that refreshes your mind as to what Mr. Snyder disclosed to you in December, about Christmas 1919?

A. The drawing in the center of the top of the page reminds me of the disclosure that Snyder gave me in 1919 in December.

Q. And you had given your testimony in this—
892 in the Brooklyn Edison case before you had seen this document?

A. That is correct.

Mr. Lane: I offer in evidence this series of Exhibits following Plaintiff's Exhibit 25 as Exhibit 25 A, which is the letter from the World Trade Club bearing the date inside of December 15, 1919 with the enclosure; 25 B the paper showing what Mr. Bradt has referred to as cylinder device, the bath tub device, bearing the date and signature of Howard Snyder of January 21, 1920.

Q. What did you call this thing?

A. That is an ironing machine.

Mr. Lane: The document dated September 26, 1920, the ironing machine detail, as Exhibit 25-D and the letter of January 20, 1922 bearing Snyder's signature, that is the insect gatherer and collector article, as Plaintiff's Exhibit 25 E.

(Documents referred to marked Plaintiff's Exhibits 25 A, 25 B, 25 C, 25 D and 25 E for identification and are received in evidence.)

Q. I believe you were asked on cross-examination about that note or inter-office communication or inter-department communication from Mr. Snyder to Mr. Maytag? A. Yes.

Q. Did that refresh your recollection as to the time
893 he was there and you were there and watched that operation of that machine? A. Yes, it did.

There has been some mention of Mrs. Ellingsworth. Have you seen Mrs. Ellingsworth?

A. Not lately. I went to her home some time in July and she was very ill and I couldn't see her.

Q. What is her condition, both mentally and physically?

A. It isn't very good. She is about seventy-six years old.

Mr. Lane: That is all.

Mr. Bristol: Have you offered that Exhibit 25?

Mr. Lane: I offer Exhibit No. 25 as a part of the 25 series.

Mr. Bristol: I object to these documents in evidence as entirely unproved so far as any sketches contained on this is concerned. And I object further on the ground that I should not be compelled to cross-examine this witness as to matters of this sort which are entirely unproved.

The Court: Overruled; exception.

Mr. Bristol: May I point out as to each one of these things that there is not the slightest statement in the record as to when the sketches were made or by whom the sketches were made or as to whether the sketches were on the paper at the time that the date on the paper shows.

894 The Court: I think that an inference may be drawn from the fact that the sketches are here over a date which has been written. I do not remember that you asked the witness who identified these instruments whether these sketches were there or not there.

Mr. Bristol: No, Your Honor, and I refrained specifically from asking him, and the reason will appear if I may refresh your recollection as to his testimony. (Testimony reread).

The witness had not attempted to say in any way that this sketch was on the paper at the time that he signed it or that he saw Snyder sign it, or anything else to authenticate that. I was perfectly satisfied on that proof not to cross-examine him because the rest of the paper was utterly incompetent.

The Court: As I said a moment ago, and I am more certain now than before that I am right, the deficiency in the evidence would justify the inference that the sketch was there. He said he signed it as a witness, a witness of what? There was nothing else on the paper other than the sketch.

Mr. Bristol: He has never said there was a sketch on it.

The Court: I know. He said he signed it as a witness.

Mr. Bristol: Then I ask for the privilege of recalling Mooar for further cross-examination, if Your Honor
895 believes that inference is proper.

The Court: Very well.

Mr. Lane: The inference was that we held him too long at the hotel, so we let him go home last night.

Mr. Bristol: It would have been so simple for you to have asked him the question.

Mr. Lane: It would have been so simple for you to ask him, but you elected to stand on that kind of a record you are making.

Mr. Bristol: I believe I had a right to stand on that kind of a record.

Mr. Lane: We are perfectly willing to stand right where we are.

Mr. Bristol: I think I should renew my objection, or rather perhaps move to strike out this document on the ground that it has not been proved so far as any of the sketches are concerned. I would, of course, have no objection to the introduction of the signatures which Mr. Mooar identified.

The Court: The motion is denied; exception allowed.

Cross-Examination.

By Mr. Bristol:

You show me this paper which has been marked Plaintiff's Exhibit 25 A. "H. S." and "D. M." are the only initials I see on it. I recognize the initials "D. M." to be the initials of Dave Mooar. I believe I recognize the handwriting
896 in which those initials are put on there.

Q. Whose is it?

A. Do you mean whose handwriting?

Q. Yes.

A. I don't know, but I presume it is Dave Mooar's.

Q. Now, take a look at Plaintiff's Exhibit 25. You were able to recognize Mooar's handwriting on that, were you not?

A. It looks to me like Dave Mooar's handwriting.

Q. You have testified that you could identify it as his handwriting, didn't you? A. Yes.

Q. That is the fact, isn't it? A. I think so.

Q. What about those initials "D. M." on Exhibit 25 A?

A. Well, there is a difference in the construction of the "D". The "M" looks very much the same.

Q. Do you think the handwriting is the same or different in those initials?

A. I think it is the same.

Q. Now, did you discuss Exhibit 25A with Mr. Mooar?

A. Yes.

Q. At what time?

A. In July when I found the sketches.

Q. Did he recognize his initials?

A. He did.

Q. And you also discussed Plaintiff's Exhibit 25 with him, did you not? A. That is correct.

897 Q. At what time?

A. In July, several days after I found them.

Q. You are familiar with the general subject matter of sketches are you not, of washing machines? A. Yes.

Q. Look at Plaintiff's Exhibit 25 A and tell me what that sketch at the lower portion of the inside of the opened envelope represents?

A. It appears to me that it is to be the cross section of a wood tub washer with a shaft going down through the lid, down into a hole in the bottom of the tub and what appears to me to be a disk on the bottom of that shaft with blades. The way the sketch was drawn it appears to have four blades. There is a pinion at the top of that shaft and a rack bar actuated by a hand lever, the lower end of which is fastened to the tub for reciprocating it.

Q. With that construction, what sort of motion will be imparted to the agitator at the bottom of the tub?

A. An oscillating motion, first one way and then the other.

Q. What sort of water action will that produce in the tub?

A. I do not know; I have never seen it tried.

Q. Now, will you take a look, please, at Plaintiff's Exhibit 25 and tell me what indication you get from a

898 sketch at the left side of the paper and near the bottom; what would you believe that to represent?

A. My interpretation of that is a base with at least three blades—I don't know whether there is a blade on the other side, or not, but at least three blades protruding upwardly, hinged to the base and allowed to lean back and forth against the two pegs or stoppers on the base.

Q. The tub indicated on Plaintiff's Exhibit 25 A, would you regard that as a wooden tub or a metal tub, or what?

A. I would regard that as a wood tub on account of the construction of the bottom and the size of the tub.

Q. And operated by hand power?

A. The machine represented in this sketch?

Q. Yes. A. Yes, I would say that was actuated by hand.

Q. How frequently did you see Mr. Snyder in 1920 and 1921?

A. I couldn't say exactly, but I would think on an average of at least once a week, maybe oftener.

Q. What is there that associates in your mind anything about a wood tub and something that Mr. Snyder said to you about your engagement?

A. During the time I was talking to him on the 21st of May I recalled the previous December he said he was going

to put this construction in a metal tub, and I called
899 that to his attension, and he said the aluminum tub cost about $50.00 and the wood tub was much cheaper to experiment with.

Q. Will you go ahead and explain to me what there is about the date of the announcement of your engagement that connects in your mind any particular discussion that you had with Mr. Snyder about tubs and bottom agitators?

A. Because I was in his office that day that he made the remark about the piece appearing in the paper the night before.

Q. And you were in his office at least once a week all throughout the year, weren't you?

A. An average of at least once a week, I think.

Q. What pictures it the day on which you were engaged as distinguished from all other days on which you talked to Mr. Snyder about wooden tubs?

A. It was a rather important date to me, for two reasons, the fact of the publication of my engagement and this new idea that he had told me about previously and which I had then seen for the first time. I was very much interested in it.

Q. What date did you next talk with Snyder about this substantially new idea?

A. I talked with him periodically about it, for some time afterwards.

Q. Once a week? A. That I talked about that spe--
900 cific thing?

Q. Yes. A. I couldn't say about that.

Q. That was a long time ago, wasn't it?

A. We were very busy at that time, I remember, trying to get into production on the cast aluminum tub. We were having a great deal of difficulty. I remember it was at that time.

Q. And that was true also through 1921 about your being busy wasn't it? A. That is correct.

Q. And it was equally true about your seeing Mr. Snyder one or two times a week? A. Once a week; that is correct.

Q. Or oftener?

A. It may have been oftener. There may have been several weeks when I didn't see him at all.

Q. Does the Maytag Company keep pretty good records?

A. Fairly good. They are not as good as they should be.

Q. You have a daily sales record from 1915 clear through to 1930, haven't you?

A. A daily sales record?

Q. Yes. A. I think not.

Q. Haven't you a book that is entitled "Daily Sales Record" or something like that, something of that sort?

A. We have a serial number book, or books. Maybe what you refer to is our daily stock record, record of production?

901 Q. You do keep a daily production record of all products produced, or do you know?

A. Yes, that is right.

Q. What is the official title of that book?

A. Part of the time it was kept on loose sheets.

Q. And those are bound into a book after a while, are they not? A. At one time they were loose. Here are some of those records, entitled "Daily Stock Reports".

Q. Don't you keep a daily sales record also?

Mr. Lane: Do you mean now, or at some previous time?

Q. Didn't you for the period from 1915 to 1930 keep such a record? A. No, I think not.

Q. What was the practice from 1922 backwards with regard to shop requisitions in the various departments of the Maytag Company, requisitions for shop supplies?

A. The general practice was for one department to write an order on another department for materials, supplies, castings, and things like that.

Q. Those were written in duplicate, were they?

A. Many times they were; they were supposed to have been.

902 Q. You had a regular form for that, didn't you?

A. Yes.

Q. What was the fact about the company's practice with regard to preservation of such requisitions for shop supplies? A. They were supposed to be preserved.

Q. Permanently, were they not? A. They were.

Q. Have you examined the permanent files for requisitions or shop supplies in connection with the examination of your records that Mr. Lane asked you about?

A. Yes, sir.

Q. And you did not find anything there dealing with materials and parts that went into that early wooden tub machine that you testified about?

A. Do you mean the one I referred to in May, 1920?

Q. Yes. A. No, that stuff was all in the experimental department and it wasn't necessary to make any requisitions in many cases. They used material they already had in the department.

Q. Wasn't it a power leg from a Model 70 machine that was claimed to have been used?

A. It was a power leg but the machine had not been designated as a Model 70 at that time, and that was all made in the Experimental department.

903 Q. Anyway, you didn't find any shop requisition covering any materials about that date that may have gone into that machine, or did you?

A. Not into that machine, but I found records prior to that date as to the construction of the power legs of the machine later known as Model 70.

Q. How many different wood tub machines were tried out at Mrs. Ellingsworth's?

A. I haven't any idea. Machines had been tried out over there for may years.

The Maytag Company keeps a complete file of pattern numbers and descriptions. I don't know how long that file has been kept but back of 1920, at any rate. I think the record that I refer to is the production record. When a part or casting is created it is usually first given an experimental number, then when it is put into production it is given a production number. There is a record or at least a partial record in the experimental department and there may be a record in the pattern department regarding the patterns. I don't know what their practice is there. The production patterns usually get some special designation. On certain types of washers it gets a "K" prefixed before the number. The experimental patterns get a "Y", and those are sometimes used interchangeably.

Q. Preceding the making of a pattern, what is prepared?

904 A. Well, it depends on the stage of the progress of the part. Lots of times patterns are made for the experimental department without any pattern designation at all until they get past a certain stage of development.

Q. Will that get into the pattern book under those circumstances? A. Not necessarily.

There is such a book as the "Y" book. I don't know what date it begins, but I believe 1914 or 1915, some place along there. I wouldn't say it was "carefully kept"; I would say it was kept about the way records usually are kept in a shop. It has a blank form at the bottom of it, at the bottom of each page for an affidavit. I don't know what that affidavit is supposed to say when it is filled in, but I think I have a copy of the page here (indicating). I have not got a blank sheet here, but I have one with the form on it. I will read the affidavit form at the bottom of the page; all of these pages are printed with the same form:

"State of Iowa, Jasper County, I (blank) being first duly sworn deposeth and saith as follows, that I am personally well acquainted with and of my own knowledge know that the above-numbered and described parts are the development of the Maytag Company's products,"

and there is a place left for signature and for the Notary. Perhaps that is supposed to be filled in and signed, but I have never seen one filled in.

905 Q. In the shop supply requisition file what is the slip that ties up with the washer that is in evidence here as Plaintiff's Exhibit 8 A, the first slip?

A. If I understand you correctly the record shows a cast aluminum tub made September 26, 1919.

Q. Has that any connection with Plaintiff's Exhibit 8 A?

A. Is Plaintiff's Exhibit 8 A the one you just put your hand on?

Q. Yes.

A. It is that kind of a tub.

Q. It doesn't indicate that the particular tub in Exhibit 8 A was made on that date, does it?

A. Not necessarily.

The first date from the "Y" book for the pattern "Y-1447" is December 21, 1921. I believe I have got the drawing on that, the original drawing. Here is a drawing and blue print. That drawing is signed by J. Mikulasek. He is still in the employ of the Maytag Company. He is a draftsman in the experimental department. In 1921 and also in 1920 he was a draftsman in the office of the Experimental department.

Q. This is the original drawing which you have now produced No. Y-1447?

A. I do not know if this is the original drawing or a tracing of the original drawing. I believe the original drawing is in the files here some place.

906 Q. I wonder if you would be good enough to take the time to find the original drawing?

A. (Indicating) This appears to be the original drawing in pencil.

Q. I call your attention to the agitator which I have taken out of Plaintiff's Exhibit 8 A. Will you just read from the pattern number that agitator shows?

A. "Y-1447".

Q. Will you refer to the tracing that you have produced here and tell me whether that tracing bears the same number?

A. "Y-1447".

Q. Now, will you tell me whether that agitator that you hold in your hand corresponds to that tracing?

A. No.

Q. In what respect does it differ from the tracing?

A. The shape of the blades on the heavier part of the penciled line, but there is a dotted line here that corresponds approximately to the shape of this agitator, Y-1447.

Q. When were these dotted lines put on the original drawing or the tracing?

A. I don't know. They were on when I found it first.

Q. Mikulasek would be able to tell, wouldn't he?

A. I don't know.

907 Q. Would you draw any inference from the fact that the original tracing shows curves and flowing lines and more or less straightened parts apparently in free hand in dotted lines?

A. I wouldn't have any idea how that was done.

Q. At any rate, how would the date of this agitator from Plaintiff's Exhibit 8 A compare with the date of the tracing which you have produced?

A. Both on the date of December 21, 1921.

Q. I mean how would the date of production on the agitator compare with the date of the drawing?

A. I don't know about the date of production, but I have a requisition order here dated December 23 for one casting, Y-1447.

Q. Which casting was that, the one with the high rounded blades or the one with the lower straight-lined blades?

A. There is no way to tell from this.

Q. Who could tell that?

A. I don't know.

Q. Isn't there anybody in your organization who could tell which form came first?

A. I don't know whether there is or not.

Q. Have you asked anybody about it?

A. No.

Q. Did you notice the difference between the agitator from Plaintiff's Exhibit 8 A and the full lines of the original tracing until I called your attention to it?

908 A. No, I did not.

Q. You hadn't noticed it? A. No, I hadn't.

Mr. Bristol: I ask that the tracing which the witness has produced be marked Defendant's Exhibit 46, and that the original drawing from which this tracing was made be marked Defendant's Exhibit 46 A and I offer Defendant's Exhibit 46 and 46 A in evidence.

The Court: They are received in evidence but they may be withdrawn by counsel for plaintiff upon his substituting for them photostatic copies with the understanding that if the originals should ever be demanded in a court of justice they will be produced.

(Exhibits referred to marked Defendant's Exhibits 46 and 46 A for identification and are received in evidence.)

The Witness: I did not consult with Mr. Mikulasek as to the date of these dotted lines on Defendant's Exhibit 46 and 46 A. Today was the first time that I noticed the fact that the agitator in Plaintiff's Exhibit 8 A does not correspond to the drawing Defendant's Exhibit 46.

There is not another drawing Y 1447 that shows the shape of the agitator plates, as we find them actually in Plaintiff's Exhibit 8 A, that I know of. There is only the one drawing and the one tracing that I know of, having that particular Y number.

909 Q. Will you look in the Y book, and see, please.
A. I don't have all the pages of the Y book here but there is no reference of that kind in the pages that I do have.
Q. Have you got the Y book page on which there is a reference to Y 1447?
A. That is correct.
Q. Now, I show you photostats of parts of drawings or drawings, I don't know which, and ask you whether you can identify them?
A. This one carries the date of February 6, 1922 and it is a drawing of a wood tub washer with an agitator in the bottom, flat, referred to as a flat agitator.
Q. Can you produce the blue prints of tracings of these particular drawings that I have shown you?
A. I don't believe I have those here, Mr. Bristol.
Q. You are familiar with them, aren't you?
A. I think so.

Mr. Bristol: I offer the two photostats which the witness had identified in evidence as Defendant's Exhibits 47 A and 47 B.

(Photostats marked Defendant's Exhibit 47 A and 47 B for identification and received in evidence).

Q. Now, the date February 6, 1922 shows on that
910 photostat Exhibit 47 B, does it not?
A. Yes, sir.
A. This is not at all like the replica of 1920.

Q. I have not asked you that question yet. I will in just a moment. What is the date of Defendant's Exhibit 47 A?

A. I don't see any date on 47 A.

Q. Mr. Mikulasek I believe gave the date of that, speaking from the original drawing, as February 5, 1922. There you are, if you want to verify that. (handing volume of transcript to witness). Do you accept February 5, 1922 as the date?

A. I can say it was approximately that date.

Q. That is all, that is sufficient. Now, Mr. Bradt will you examine again Plaintiff's Exhibit 8 and tell me whether the structure of Plaintiff's Exhibit 8 is anywhere similar to the structure shown on those two photostats, Defendant's Exhibits 47 A and 47 B?

A. They are not alike in any respect.

Q. Each is a wood tub, isn't it?

A. Each is a wood tub.

Q. Each has a power leg, hasn't it?

A. I cannot tell from this drawing what this is but I presume it is.

Q. And each has an under drive, hasn't it?

911 A. It appears that way.

Q. And each has an agitator in the bottom of the tub, hasn't it? A. That's right.

Q. And each is arranged for oscillation of that agitator, is it not?

A. I presume so.

Q. And each shows a clutch to engage and disengage the power leg for operation of the agitator?

A. I suppose this handle would be a clutch or something to disconnect it.

Q. And there is such a thing on Plaintiff's Exhibit 8 also, isn't there? A. That's right.

Q. Was the apparatus shown in those drawings, Defendant's Exhibit 47 A and 47 B ever made?

A. Not that I know of; they may have been.

Q. Don't you know that Mikulasek testified in the case of Apex versus Landers, Frary and Clark?

Mr. Lane: Objected to as incompetent, irrelevant and immaterial.

The Court: I would like to hear the rest of the question.

Mr. Lane: Excuse me.

A. (Continuing) That that machine was made and was sent for experimental use to Mrs. Ellingsworth's.

Mr. Lane: Objected to as incompetent, irrelevant and immaterial.

912 The Court: Sustained, exception allowed.

Q. Haven't you so testified?

A. Not to my knowledge; at least, I don't recall that I did.

Q. You do know, don't you that there were numerous wood tub machines put out to Mrs. Ellingsworth's for experimental use? A. I cannot say that I saw any out there.

Q. You didn't?

Mr. Lane: He said he could not say that he saw any out there.

Q. No, I don't believe I did.

Q. No wood tub machines in Mrs. Ellingsworth's for experimental purposes?

A. You mean along about this time?

Q. Any times?

A. I may have seen some wood tub machines out there at one time or another.

Q. With agitators in the bottom?

A. I don't believe I have.

Mr. Lane: Do you get what he is asking you?

Q. How many wood tub machines with agitators in the bottom were put out to Mrs. Ellingsworth's for test?

A. I don't know.

Q. Who would?

A. Probably Howard Snyder is the only man that would have known all about them.

913 Q. Mikulasek, knew, didn't he?

A. No, I think not.

Q. Don't you know at all that there were several different wood tub machines with agitators in the bottom tried out at Mrs. Ellingsworth's by the Maytag Company?

A. I know from some machines that I saw in the experimental department that I heard were being sent to Mrs. Ellingsworth's.

Q. There were several of those, weren't there?

A. I believe so.

You show me another photostat. I can identify that. That is a drawing of a gyrator. The date of it is February 7, 1922. That is a Maytag drawing. As to who made it, it carries the initials of J. M., which I presume is John Mikulasek.

(Photostat of drawing marked Defendant's Exhibit 48 for identification and received in evidence.)

Q. Was this agitator shown in Defendant's Exhibit 48 made?

A. I believe the record shows it had been made.

Q. And was it put in a wood tub? A. Yes.

Q. And was it sent to Mrs. Ellingsworth's?

A. I don't know about that.

Q. Didn't you testify by deposition in the case of
914 Apex versus Landers, Frary and Clark that you recognized the paper, Defendant's Exhibit 47 A as the cross section drawing of a flat bottom wood tub machine in which that same style of gyratator was used?

A. Yes, I so testified.

Q. And then the gyrator shown in the defendant's Exhibit 48 was used in that same wood tub machine, wasn't it?

A. Well, I don't know but I presume it was.

Q. Didn't you so testify?

A. Is that the one in this drawing here (indicating)?

Q. Yes.

A. Yes, I think I so testified.

Q. And didn't you testify that that tub was actually built? A. I think so.

Q. And didn't you testify that it was used?

A. I think I did.

Q. And didn't you testify that it was used in the home of a wash woman in Newton?

A. I don't remember that.

Q. And didn't you testify that her name was Mrs. Ellingsworth?

A. If I mentioned a wash woman in Newton that is the name.

Q. Now, I call your attention to the transcript of your deposition. I do not want to get you into any false
915 position but isn't that the substance of your testimony there?

A. Well, I think now as I did then that the machine was produced, that it was used, but I did not see it in the home of Mrs. Ellingsworth.

Q. But you testified, didn't you, that it was used in the home of a wash woman in Newton whose name was Mrs. Ellingsworth?

A. To the best of my knowledge that is where it was used.

Q. And over how long a period was it used?

A. I don't remember.

Q. Didn't you testify that it was used for three years?

A. I don't remember what testimony I gave then.

Q. Do you remember what the fact was, whether it was used for three years or not?

A. I know it was used for some time but I don't know the length of time now.

Q. Tell me again now, was it or was it not used—did you or did you not see it in operation at Mrs. Ellingsworth's.

A. I did not.

Q. Now, I call your attention to the transcript of your testimony which was taken on March 4, 1937 at the office of Parkinson and Lane in Chicago and ask you if you did not give this testimony:

"Q. Did you ever see it in operation? A. Yes, sir.

"Q. Where did you see it in operation?

916 "A. In Mrs. Ellingsworth's home.

"Q. What was Mrs. Ellingsworth's occupation?

"A. Well, she took in washing for the public, sort of the public in general.

"Q. Do you know what finally happened to this machine?

"A. I think it was taken from her home about three years later with the bottom, the machine was so old the bottom had bulged out and it was rubbing on the gyrator and it was no longer usable."

Q. Did you so testify? A. Yes, I believe I did.

Q. And was that true at that time? A. Yes, I think I did see it, now.

Q. And it is true now, isn't it? A. I think so.

Q. So that there is at least two wooden tub washers with bottom agitators that you saw in operation at Mrs. Ellingsworth's, isn't it?

A. If the one I testified is the one I saw at that time then that is true, one in May, 1920, and another one in 1922.

Q. Now, how many other wooden tub washers were tested out at Mrs. Ellingsworth's?

A. I don't remember now.

Q. Was it five or less or more?

A. To go clear back, there was an old wood tub dolly machine was being tested out there and I remember

917 another old wood tub machine where a tub was kept sitting on a steel rack.

Q. When was that? A. I think it was the early part of 1918.

Q. You are quite sure of that date, are you? A. No, I am not sure.

Q. Well, what others did you see there or did you know about being there? A. I saw a Maytag cabinet washer, cylinder washer at about that time.

Q. I am speaking about wooden tubs now. A. I don't recall off hand that I saw it there.

Q. There were some more, weren't there whether you saw them or not? A. Well, I couldn't say.

Q. What makes you so sure that you saw the wooden tub machine with the bottom agitator out there in May, 1920, when you were equally sure that you did not see a later wooden tub machine of which the Maytag Company has its own drawings and as to which you testified in a different case that you had seen it there in operation?

A. I do not think I testified that I saw a wood tub machine out there in May, 1920. I saw it in Howard Snyder's experimental department in May, 1920.

Q. Then you did not see it at Mrs. Ellingsworth's at all?

A. I don't think I testified that I had seen it at Mrs. Ellingsworth's.

918 Q. Regardless of whether you testified so or not, did you see it there?

Mr. Lane: You are talking about the wooden tub machine?

Mr. Bristol: Yes. A. In May, 1920?

Q. Yes. A. No.

Q. You did not see it at Mrs. Ellingsworth's? A. No, I didn't.

Mr. Bristol: That is all.

Redirect Examination.

By Mr. Lane:

Q. I just want one or two questions. You were asked on direct examination concerning a discussion, the way the question was put, with Mr. Mooar concerning these exhibits you found in Mr. Snyder's box. Just what did you do on that occasion and that discussion? The inference was left that you discussed it. I would like to have you say just what was done?

A. You mean that I discussed it with Mr. Mooar?

Q. Yes, Mr. Mooar, when you showed him these exhibits that you found in Mr. Snyder's box in July of this year. You said that you had shown it to Mr. Mooar and the question inferred that you discussed them with him. What was that discussion?

A. When I found the drawings it was a short time after the department had been torn up and it was being re-

919 allocated. Mr. Mooar was not there when I found the drawings and a few days later when he came back

I showed him the drawings and asked him if he had ever seen these before and he looked at them quite a while.

Q. But did you do anything further than to just ask him about his identification of them and whether he could identify them at that time or not?

A. Yes; I asked him if he knew anything about this box that they were in.

Q. Anything else that you asked him? A. I don't recall anything else right now.

Q. Now, then Mr. Thorton testified in answer to cross examination that he had seen in the Maytag Company plant while he was there employed between April, 1919, and October, 1920, which was the only time he said he was there, an impeller substantially identical with the one I have just taken from Plaintiff's Exhibit 8 A. Did you, during the time of his employment, see any similar structure?

A. Yes, I did.

Q. Now, Mr. Bristol has called your attention to the similarity between the structure of the Plaintiff's Exhibit 8 and the drawings. You have made the statement that they were not at all alike. Will you point out what you meant when you made that statement?

A. Because the agitator in this machine and the tub marked Defendant's Exhibit 47 A has a large dolly
920 in the center; it is cast all in one piece; it has sloping sides down from that dome and the plates go over the periphery of the gyrator up to and attached to the dome and the top view of this shows that the plates were quite thick and were hollow.

Q. Now, you were interrogated about some testimony you gave in the Apex case which I have never seen. How did you happen to testify in that case? Were we connected with it?

A. Yes; I was asked to testify by your office.

Q. Did we participate as attorneys in that case?

A. Yes.

Q. You mean we actually had anything to do with the trial of the case? A. No.

Q. We asked you to come in and testify in behalf or furnish your services for Landers, Frary & Clark?

A. That is correct.

Q. I was not in the case at all or present, was I?

A. No; it was Landers, Frary & Clark's attorneys that interrogated me.

Q. We simply told them that we could make you available for their purposes? A. That's right.

Q. At that time did you look up carefully the records concerning which they made inquiries?

A. Yes, I made a very careful study at that time.
Q. And you had the material fresh in your mind in connection with your testimony? A. That's right.
921 Q. Was any question raised at that time with respect to the gyrator mechanism that is involved here, that you saw in 1920?
A. Not that I recall.
Q. What did that particular testimony relate to; I am not familiar with it; that they were asking you about at that time?
A. It related to the construction of an agitator with the broad base, a sloping base, sloping clear out to the edge of the agitator,—to the periphery.
Q. Now that you have been shown your testimony that you gave at that time your memory is refreshed and you feel that the testimony you gave was accurate as given at the time?
A. Yes; I am beginning to segregate the machines that were under discussion at that time with a lot of other ones that we were testing and working with.

Mr. Lane: That is all.

Recross Examination.

By Mr. Bristol:
Q. In answer to Mr. Lane's question you said you saw some kind of an agitator during Mr. Thornton's employment with the Maytag Company which was similar to the agitator in Plaintiff's Exhibit 8 A. Have you got the drawing of that so-called similar agitator?
A. No, I don't think so.
Q. Was there a drawing of it?
922 A. Not that I know of.
Q. Have you referred to it previously at all in any part of your testimony in this case?
A. I believe not in this case, no.

(Witness excused).

(Tucker's Patent of Jan. 12, 1809, marked Plaintiff's Exhibit 33 for identification and received in evidence).

Mr. Lane: I offer the certified copy of the Findings of Fact of Judge Byers in the Brooklyn Edison case, of which your Honor has a copy, just to make it a part of the record.

(Copy of Findings of Fact marked Plaintiff's Exhibit 34 for identification and received in evidence).

Mr. Lane: Copy of the opinions of the patent office in the Unruh-Snyder Interference.

(Copy of opinion referred to marked Plaintiff's Exhibit 35 for identification and is received in evidence).

Mr. Lane: I offer in evidence History of the application of the Davis patent No. 1,240,826.

(Document referred to marked Plaintiff's Exhibit 36 for identification and is received in evidence).

923 Mr. Lane: I offer in evidence the Cooper patent Number 83,764 of 1868 which Mr. Taggart testified about and I also offer in evidence as Plaintiff's Exhibit 12 B, that is one of defendant's agitator machines which has already been identified under that number and identified by the witness. It has already been marked for identification.

(Patent to Cooper No. 83,764 marked Plaintiff's Exhibit 37 for identification and Plaintiff's Exhibit 12 B marked for identification and received in evidence.)

Mr. Lane: I am offering in evidence the deposition of Sherman Harrison Weeks.

924 SHERMAN HARRISON WEEKS, a witness for the plaintiff, Testimony taken by deposition at Chicago, November 8, 1937.

Direct Examination.

By Mr. Loftus:

My name is Sherman Harrison Weeks and I live at 1929 Vine Street, Davenport, Iowa. I am sixty-one years old.

In 1912, 1913 and 1914 I was travelling salesman, selling washing machines wholesale for the Voss Brothers Manufacturing Company, Davenport, Iowa. The peg dolly type, and the flat—what is known as the rub-board type of washing machines were then being manufactured by the Voss Brothers Company of Davenport, and being sold by me.

The peg dolly was known as the milk stool type, a round piece of wood with pegs projecting down—three, four, five, sometimes six. A shaft was fastened to the back end, or [or] the top of this dasher and projected up through the lid of the machine, and was driven from mechanism on top of the machine, and it oscillated, or turned back and forth about one-half turn each way, and that—those pegs would catch hold of the clothes and turn them back and forth and do a certain amount of rubbing on the bottom and the sides of the tub. Those tubs were corrugated inside, on the sides and bottom.

The Voss Brothers Company was one of the old washing machine companies at that time, in business in the United States.

925 The peg dolly type of washing machines was being principally sold in this country during those years, say, 1912, 1913 and 1914. Other companies which to my knowledge were putting out peg dolly type machines in the United States, at that time were: The One Minute Company—Manufacturing Company, of Newton, Iowa; The Quicker Yet, of Perry, Iowa; the Automatic, of Newton, Iowa; The White Lily, of Davenport, Iowa; the Wells H. Press Company of Streator; the A. B. C., of Peoria; the Haag Brothers of Peoria; those were the principal ones at that time manufacturing peg dolly type machines, The Maytag made one, also.

From my experience in handling these peg dolly type type washing machines, the chief objection I encountered as to those machines in the field from the housewives was the wear and tear on the clothes.

Q15. Tell us, now, what that was due from, and just how those peg type dolly machines operated on the clothes.

A15. Well, the water of course was put in the tub first; then the clothes put in; then in most of these types the lid was let down while you held onto the shaft that was up above to hold the dolly up to the lid so that it would not strike he tub when it went down; and then that settled down on top of the clothes and caught the clothes and swished them back and forth through the water at a speed approximately about 36 turns per minute back and forth—about a half turn, not a complete turn.

926 I think that was the standard speed of all these peg type dolly machines at that time. As to why they used that speed, well, the faster operation naturally would make this peg dolly harder on the clothes; there would be more wear, more tear the faster it turned.

(Leaflet marked Plaintiff's Deposition Exhibit 9 for identification.) [Now Plaintiff's Exhibit 38].

A leaflet marked in this case Plaintiff's Exhibit 9 for identification illustrates, in the upper right hand corner the peg dolly type—representing the peg dolly type that was used in the Voss machines. I should say that that piece of literature put out by the Voss Brothers Manufacturing Company, of Davenport, Iowa, was descriptive of their peg type dolly machines and others. While I was with them, I used literature of that character, put out by the Voss Brothers.

The rub-board type was a flat disc with ribs—wooden ribs attached to the bottom; and it could be used in the same machine that the peg dolly type was used in, and it was supposed to be easier on the clothes than the peg dolly type.

On the Voss machines the shaft was fastened to the back of both the dolly type and the rub-board or disc type; the shaft extended up through the lid and was operated by a mechanism on top of the tub, back and forth. When the lid was down and the dolly or the disc was inside the tub, "the back" would be the top side of he dolly or disc. The ribs would be on the underside.

927 The rub-board type manufactured by Voss Brothers at that time, and sold by me, operated about the same speed as the dolly type; in fact, they were put in the same machines; and it operated back and forth, and would settle down in the tub, or in the water on top of the clothes and rub the clothes then. It would rub the clothes back and forth, rubbing over the top of the clothes; then after it operated for a while, they would lift the lid and take a stick and turn the clothes over and then rub them on the other side. When you lifted the lid you caught the top of this shaft and pulled it up against the lid and then tipped back. Then it would come up. Otherwise, if you tried to lift the lid without pulling up the shaft attached to the back of this disc it would hit the tub, it would not come out.

Q28. Why did you do that in the operation of those machines, using the rub-board type of machines, why did they want to take a stick and turn the clothes over; I mean, why did they do it?

A28. In the mass of clothes it rubbed the top of the clothes very nicely but it did not do a very good job on the bottom of the clothes; it would not turn them over.

I stated that the rub-board type was brought out because they thought it would be less severe on the clothes than the peg dolly type. In actual use I found that the disc or rub-board type was not anywheres near as efficient as the peg dolly type, in getting the clothes clean, in the same length of time.

928 I found out that on the average batch of clothes, that is I mean as to being dirty, you could wash them very well with the peg dolly type in about fifteen minutes—and that was the time they were supposed to run them, about that time; and with the disc type you would have to run them about twenty-five minutes and then would not get them as

clean on account of the disc or rub-board type rubbing more over the top of the clothes and not grabbing hold of them and turning them the way the dolly type did.

I don't think it was as severe on the clothes as the peg dolly, so far as wear and tear was concerned. It operated at approximately the same speed as the peg dolly type, about 36 turns back and forth per minute.

In Plaintiff's Exhibit 9 for identification, the cut in the center of that page is an illustration of the rub-board or disc type used in the Voss Washing machine.

(Leaflet marked Plaintiff's Deposition Exhibit 9.) [Now Plaintiff's Exhibit 38].

If I remember correctly, Plaintiff's Deposition Exhibit 9 is a representation of a leaf out of one of the Voss Catalogs that the travelling salesmen had at that time, representing the peg dolly type, and the disc or rub-board type used in the Voss Washing Machines along about 1913 or 1914. I am pretty sure I used these leaflets, or something similar to it, in connection with the sale of those machines. They were furnished to me by the Voss Brothers Manufacturing Company.

(Circular marked Plaintiff's Deposition Exhibit 10 for identification). [Now Plaintiff's Exhibit 39].

929 The circulars, Plaintiff's Deposition Exhibit 10 for identification shows cuts of Voss power—gasoline power and electric motor driven washers, and were put out about 1913 or 1914; 1914, I am pretty sure of, but 1913, I am not quite so positive, of that particular type. I made use of those circulars in connection with my work in showing them to the dealers purchasing power and electric washers, and also selling to the retail trade—I mean, selling retail.

The machine illustrated in this Exhibit 10, in that cut marked E-1 is an electric motor driven machine representing the disc or rub-board type washer.

(Circular marked Plaintiff's Deposition Exhibit 11 for identification.) [Now Plaintiff's Exhibit 40].

Plaintiff's Deposition Exhibit 11, I think, is a circular put out by the Voss Brothers Manufacturing Company, representing the hand dolly type washer, called the, "Sunshine".

That was a peg dolly type machine.

On the opposite side of the circular is represented the dolly type, and the disc or rub-board type; the "Ocean Wave", "Universal Power", and, "Voss Electric" are peg
930 dolly type, and the "Automatic" is the disc or rub-board type. I used those circulars, showing them to the dealers, during the course of my sales talk, showing them the different washing machines manufactured by the Voss Brothers. I made use of this circular during the time that I was employed by them, throughout my territory.

The rub-boards put out by Voss Brothers with which I had to do, had on the upper side a malleable iron flange as described in this circular, Plaintiff's Deposition Exhibit 9.

By Mr. Loftus:

Q54. From your experience, what function did that serve in operation of the rub-board type machine?

A54. Well, the additional weight would press this disc down into the water and on top of the clothes; the longer it worked why the further it would go down if the clothes did not stop it.

Q55. Why did they want to press it, or why did you press it down into the clothes?

A55. Well, otherwise if you didn't have something to press it down into the water on the operation of the disc it would travel on top of the water instead of rubbing on the clothes.

Q56. Well, why did you press it into the clothes?

A56. To make it more efficient, rub the clothes more, because that was primarily a rubbing type of agitator.

Q57. It is further stated in this Plaintiff's Deposition Exhibit 9:

931 "Like the peg dasher, the disc automatically adjusts itself to the size of the wash always resting on top of the clothes."

[—] What did you find to be the fact in actual operation, on that point?

A57. Well, the difference between the disc type and the peg dolly type was the fact that on account of the length of the pegs they caught hold of the clothes and swished them through the water a great deal more than the disc type. The disc type would rub on the top or over the top, and on account of its diameter of course would not get very far down into the clothes, so that the dolly type would be much more efficient, principally because the washing principle at that time was forcing the clothes through the water.

While I was selling these machines for Voss Brothers, the peg dolly type and the disc type were interchangeable; but it wasn't very often that we had an order to do that, that is I mean from the dealers. The rub-board was furnished on special orders; it was supposed to be on special order.

I also sold rub-board type machines and peg dolly type machines for Superior Machine Company, Sterling, Illinois; Haag Brothers, of Peoria, Illinois. I started working for the Superior Washing Machine Company of Sterling, Illinois about October, 1914, and I did not leave their service until about June, 1915. I think that is approximately the date.

932 The Superior peg dolly, if I remember correctly, was a dolly type that went down over a shaft in the center of the machine. It operated on the clothes approximately the same as the Voss, by catching the clothes and moving them back and forth through the water. While I was with the Superior Machine Company of Sterling, Illinois, engaged in the sale of its peg dolly type machines, I found the chief objection, in the field as to those machines, to be excessive wear and tear on the clothes.

(Leaflet marked Plaintiff's Deposition Exhibit 12 for identification.) [Now Plaintiff's Exhibit 41.]

A leaflet marked for identification Plaintiff's Exhibit 12 is a cut of what was known as the Sterling Power Washer, put out by the Superior Machine—or made by the Superior Machine Company, of Sterling, Illinois, and sold during the time I was employed by them; and it is a representation of the disc or rub-board type dasher. That accurately represents the disc or rub-board type washer that I had to do with while I was with the Superior Machine Company. In that machine there was a shaft fastened to the back of the disc there and run up through the lid of the machine, but there was an arm running across to that shaft from the wringer standard which held the dasher still while the tub turned back and forth. I don't remember any other type put out by the Superior Machine Company besides the peg dolly type and the—well, they had a—they had a different type of machine using the disc or rub-board type;
933 they later made one where the disc turned and the tub stood still; and those dashers could be alternated with the dolly type.

(Leaflet marked Plaintiff's Deposition Exhibit 13 for identification). [Now Plaintiff's Exhibit 42]

Another leaflet marked for identification Plaintiff's Exhibit 13, is a cut of the electric driven power washer manufactured by the Superior Machine Company of Sterling, Illinois, showing both the peg dolly type and the disc or rub-board type of dashers which could be used in the same machine. This Exhibit 13 was published by the Superior Machine Company, Sterling, Illinois. It was shown to the dealers, showing them how the machine looked, and telling them how it was operated. Referring to Plaintiff's Exhibit 13, the part that is marked with the large letter "A" in pencil is the disc or rub-board type dolly, or dasher. The peg or milk stool dolly is shown adjaeent thereto, on the right, near the electric cord there. The machine as sold was equipped with both the rub-board and milk stool dolly, and they were both used interchangeably with the same machine.

Based on by experience in connection with this Superior Machine shown in Plaintiff's Deposition Exhibit 13, I will describe briefly the operation of the machine with the rub-board being used. In this machine the disc or rub-board type dasher instead of having a shaft attached to the back and running up through the lid, there was a shaft running up through a pipe through the bottom of the machine, and then the pipe set over the top of that with little wings
934 on, and this dasher sat down over that, and that operated that disc—was the wings on a casting on the back of this disc, and those wings ran up through that so that it would operate back and forth. The rub-board operated on the clothes in the tub in the same way, by settling down on top of the clothes and rubbing back and forth. My experience was, that that machine did not turn the clothes over very much. I turned them over, in use by lifting that out and turning the clothes over with a stick. They wanted to turn them over with a stick to get them to wash equally well all over.

Q82. And were the clothes washed in a mass in all these machines? A82. Yes.

When they wanted to turn the clothes over with a stick in this machine, there was a lever for throwing the machine out of operation; and of course you would have to throw it out of operation because you could not take that out very well with the machine operating.

I also sold these rub-board milk stool dolly type machines for the Haag Brothers Company, of Peoria. That was after I was with Superior.

That peg dolly type in the Haag Brothers machines was operated, well the same as the Superior; there was a hole in the center of the dolly and that was put down over the shaft or a pipe with wings—little wings on it, as I have described in the Superior, and was operated by a shaft running up through the bottom of the machine, and
935 attached to the top of this—or the shaft ran up through a pipe in the bottom of this machine, and then another pipe was over that, and then this dasher had slots on each side, and that settled down over that outside pipe there.

I was engaged in selling those machines for Haag Brothers in the Fall of 1915. I covered Eastern Iowa.

(Structure marked Plaintiff's Deposition Exhibit 14 for identification). [Now Plaintiff's Exhibit 45].

A structure marked for identification Plaintiff's Exhibit 14, I would say was a peg dolly used in a Haag Machine.

(Structure marked Plaintiff's Deposition Exhibit 15). [Now Plaintiff's Exhibit 46].

A structure marked for identification Plaintiff's Exhibit 15 I would say was a disc type from the—used in a Haag Machine. I would say it was very similar to the rub-boards that I sold—the rub-boards utilized in the Haag Machine that I sold while with that Company.

Q93. While selling the Haag Machines, were those machines sold equipped both with the peg type and the rub-board type dolly?

A93. Yes, they could be so equipped, yes.

Q94. Well, were they? A94. Yes.

(Circular marked Plaintiff's Deposition Exhibit 16 for identification). [Now Plaintiff's Exhibit 43].

I would say a circular marked for identification Plaintiff's Exhibit 16 was a circular put out by the Haag Brothers Manufacturing Company, of Peoria, Illinois, in 1915 in connection with the sale of their washing machines, both the peg dolly type and the disc or rub-board type. This
936 circular shows the milk stool or peg dolly type and the rub-board used interchangeably in the same machine. They were sold that way.

Based on my own experience in the field, the rub-board in actual washing operations wasn't anywheres near as efficient as the peg dolly type or milk stool dolly. The operation of the rub-board in the Haag Machines was just about the same,

I would say as the operation of the rub-board in the previous machines which I had to do with, namely, the Superior and the Voss, as far as the washing operations were concerned.

Mr. Loftus: I offer in evidence the exhibits heretofore identified by the witness, heretofore marked Plaintiff's Exhibits 10, 11, 12, 13, 14, 15 and 16, respectively, under the same designations by which they were respectively identified.

(Whereupon said documents were received, marked, respectively, Plaintiff's Deposition Exhibits 10, 11, 12, 13 and 16, and said structures were received, and marked, respectively, Plaintiff's Exhibits 14 and 15).

Q102. In the Haag circular, Plaintiff's Exhibit 16, it is stated:

"Every housewife will like the two washing principles combined in one machine. A flat dasher for rubbing
937 delicate fabrics, laces, etc., and the peg dolly for general washing."

Is that the representation that you made to the trade in attempting to sell the machines equipped with both the peg dolly and the rub-board?

A102. Well, I told them that the flat or disc type dasher would be easier on the clothes than the peg dolly type.

In attempting to sell the washing machines equipped with the rub-board for these different companies, such as the Voss, Superior and Haag, I represented to the trade that it would be easier on the clothes than the peg dolly type. The tubs in these machines which I sold for Voss, Superior and Haag were corrugated on the inside, sides and bottom.

After I left the Haag Brothers Company of Peoria, I began working with the One-Minute Manufacturing Company of Newton, Iowa, the first of January, 1916, and continued with them until December, 1922—1921. After I left that Company, I went into business for myself.

While I was engaged in representing, first, the Voss Brothers of Davenport, and later the Superior Washing Machine Company, of Sterling, Illinois, and still later Haag Brothers, of Peoria, Illinois, and still later the One-Minute Company of Newton, Iowa, I knew of other companies—other washing machine manufacturers that had on the market washing machines equipped with rub-board dollies of the disc type. There was the Bluffton, manufactured by the

Bluffton Manufacturing Company, of Bluffton, Ohio
938 —now I am not positive that it is called the Bluffton Manufacturing Company, but the name was Bluffton, and manufactured in Bluffton; and there was the Dietz, manufactured in Cincinnati, Ohio; and the King, of Wolcott, Indiana; and the "1900" manufactured in Syracuse, New York. That is about all I can think of just now.

Q110. How about the Boss, of Cincinnati?

I think the Boss had a rub-board disc also.

(Machine marked Plaintiff's Deposition Exhibit 17 for identification).

I would say a machine in the room marked for identification Plaintiff's Exhibit 17 was a "1900". It is of the disc or rub-board type.

Q113. How does that compare with the rub-board type made by Voss of Davenport, and Superior of Sterling, Illinois, and others with which you are familiar, back in 1912, 1913, 1914, 1915, and so on?

A113. I would say it was very similiar, that is as far as the—except this one has a shaft fastened to the back of the dasher, where on some of the others there was a hole in the center of this dasher and it set down over a pipe in the center of the tub; but the working of it would be the same, the operation on the clothes.

(Machine received, marked Plaintiff's Deposition Exhibit 17.) [Machine, as subsequently rehabilitated by a cooper, now plaintiff's exhibit 47, page 833 infra]

Q114. You spoke about the Dietz rub-board type machine; I call your attention to a circular marked for
939 identification Plaintiff's Exhibit 18, and ask you to look at it, and I ask you if that accurately depicts the Dietz rub-board machines which were on the market at that time while you were engaged in selling rub-board machines for Voss of Davenport, the Superior of Sterling, and the Haag of Peoria?

(Circular marked Plaintiff's Deposition Exhibit 18 for identification).

A114. Yes, I would say that that represented the Dietz rub-board or disc type washer.

Q115. On the market, when? A115. I would say, 1915.

The Dietz was the name applied to that machine on the market. The part marked with the letter "A" on the cut

bearing the name Dietz Rub-Board, represents the rub-board disc used in the Dietz power washer.

(Circular received, marked Plaintiff's Deposition Exhibit 18). [Now Plaintiff's Exhibit 44].

A cut which is in this case as Plaintiff's Cross Exhibit 2-1 [now Plaintiff's Exhibit 18-1], represents one of the real old type of washers, principally a rub-board type. To my knowledge, that was on the market in 1912, and prior to that time.

Plaintiff's Cross Exhibit 2-3 [Now Plaintiff's Exhibit 18-3] appears to be a cut of what was known as the old Western Washer with the peg dolly. That was on the market in 1912. I had seen that type of washer prior to the time that I startetd selling washing machines.

940 I think another cut heretofore identified in this case as Plaintiff's Cross Exhibit 2-4 [now Plaintiff's Exhibit 18-4], illustrates a "1900" oscillator type. That was on the market in 1912.

Another cut which has heretofore been marked in this case as Plaintiff's Cross Exhibit 2-5, [Now Plaintiff's Exhibit 18-5], shows a cylinder type washer. That was on the market in 1912. That is typical of the cylinder type washers that were then on the market.

On the market, prior to 1921 when I went out of the washing machine business, there was the peg dolly type, and the oscillator type, the cylinder type, the disc or rub-board type, the vacuum type. I think that is the principal ones. Of course, there was some others; there was another machine that squeezed the clothes like this (illustrating) in the tub. Those were the principal ones that reached the market, the principal types.

Another cut that is in this case as Plaintiff's Cross Exhibit 2-6, [Now Plaintiff's Exhibit 18-6] illustrates a vacuum cup type.

Q132. Referring now to Plaintiff's Cross Exhibit 2-1 showing the rocker type; Plaintiff's Cross Exhibit 2-2 showing the rub-board type; Plaintiff's Cross Exhibit 2-3, which you stated was the peg dolly or milk stool type; Plaintiff's Cross Exhibit 2-4, which you stated illustrated an oscillating type; Plaintiff's Cross Exhibit 2-5 which you stated illustrated the cylinder type; and Plaintiff's Cross Exhibit 2-6 which you stated illustrated the vacuum type, do those exhibits collectively correctly illustrate the types of washing

machines on the market commercially prior to December, 1921, when you severed your connection with the
941 "One-Minute Company" of Newton, Iowa?
A132. Yes, I would say they did.

I am employed now by the Midwest Temmerman Company, selling washing machines, radios and refrigerators. Their Home Office is at Dubuque, Iowa. I am employed in Davenport, Iowa, by the Peterson Harned VonMaur Department Store.

Q135. Have you any connection with The Maytag Company of Newton, Iowa?
A135. Now?
Q136. You individually, personally.
A136. Now?
Q137. Yes.
A137. No.

I have never been employed by them. I am only interested in selling, that is all. I have no financial interest in any washing machine manufacturing company.

Cross-Examination.

By Mr. Bristol:
XQ1. Are you acquainted with any of the present or past officers of The Maytag Company?
A1. A slight acquaintance.
XQ2. Which ones?
A2. Mr. Bradt, that is the only one now. I knew Mr. Maytag before he passed away. That is as far as I know
942 the officers at the present time, I don't know any of them except if Mr. Bradt is connected with them.

I do not sell many of the wooden tub machines today. [Procelain] enamel and copper has pretty well replaced the wooden tubs.

XQ5. You referred to a washing machine, which is Plaintiff's Exhibit 17, as a specimen of a machine made by the 1900 Company of Syracuse, is that right?
A5. Yes.
XQ6. You would not dispute the statement of the inventor of that machine as to its mode of operation, would you?
A6. Well, not the mode of operation; it might be as to efficiency.

I don't know very much about the operation of that particular machine; I know machines of its type.

XQ8. Referring to this agitator marked Plaintiff's Exhibit 15, will that sink or float in water?

A8. That would sink.

XQ9. You want to stand on that, do you?

A9. Well, I have never tried to float one of them but I should judge from the amount of metal on the back of it that it would sink, also on account of the holes through there, the water would come up through there; that is my opinion, that it would sink.

XQ10. You think a plank full of holes would sink—a wooden plank?

943 A10. It would depend on how thick the plank was and how much metal there was on the back of it.

In December, 1921, I went—we formed—a friend of mine and myself formed a company for the manufacture and sale of soft drinks and bottling mineral water. We had to give that up during the year 1922. Then in January, 1923, I returned to Davenport and sold washers for the People's Light Company, from then up until August of that year; and in August, 1923, I went to work as a salesman of washing machines for the M. L. Parker Company of Davenport, and continued with them the most of the time up until September, 1927. And after that, then I sold washing machines—I can't say just exactly what year that was, the time, but I was with the Barlow Seelig Manufacturing Company, of Ripon, out in Kansas.

XQ15. Where is Ripon—how do you spell that?

A15. R-i-p-o-n. It is about twenty miles west of Fond du Lac, Wisconsin.

X16. And how long were you with that concern?

A16. I think, about three months. I was going over some accounts that they had out there in Kansas where machines had been shipped, some of them on consignment, and some others on open account, and had not been paid for, and I was directed to re-sell the machines or to have them shipped back to the warehouse.

944 After that, in 19—I think it was in 1929, I was with the Premier Duplex Cleaner—Vacuum Cleaner Company—I don't really remember their name now, but that is what they sold, Premier Duplex Vacuum Cleaners, and had charge of the Washing Machine Department at Peterson Harned VonMaur's, and then I think it was in the latter part of 1929 or 1930—I won't say just exactly which, I took a position with Peterson Harned VonMaur as collector, and

was with them for a year, until the Bank closed there, and that threw me out of a job.

XQ18. Referring to the back of this Voss Brothers Catalog sheet which has been marked Plaintiff's Exhibit 9, were you familiar with the motors such as are illustrated there?

A18. Not so much, no.

XQ19. They were a part of those machines that you sold, were they not?

A19. Yes.

XQ20. Do you know at about what speed they ran?

A20. I think, about 1200 per minute.

XQ21. What can you tell us about the speed at which the motors ran for those various other machines that you have testified about on your direct examination?

A21. Well, I think they all ran at approximately the same speed, about 1200—the washing machine motors, I think all that horse power ran at about that speed.

XQ23. Do you think any of them ran as fast as 1750 revolutions per minute?

A23. They may.

945 I think I sold more washing machines in 1913 than I did in 1912. I would say the business increased in 1914.

As to 1915 and 1916, well, I wasn't in the business long enough in 1915. The first part of that year I was taken with smallpox, and I was in the hospital for twenty-six days Then after I got out of there I attempted to go back on the road again but I had to quit on account of the marks on my hands and face, were so plain. And then those marks continued very plain up until the following winter. So during that summer that was the reason I quit the Superior Machine Company was because I could not be on the road for them, and I didn't do anything that summer except help around the house.

After I got going again, the business kept on improving gradually. I was with the "One-Minute" in 1916; I was with the Haag Brothers in the Fall of 1915, and Luthey, an implement jobber in Peoria, took over my territory, you see —in fact, they took over the entire distribution of the Haag machines in Iowa, and so that threw me out of a job there. Then I went with the One-Minute Manufacturing Company in January, and business continued better with them up until 1920, each year my territory showed a little increase. That is, if I remember correctly; I wouldn't say just exactly, but if I remember correctly it did show an increase each year.

I think electric current today is cheaper than electric current during the period when I was in the washing machine business up to 1921.

946 I don't know anything about the comparative cost of electric motors today as compared with the cost prior to 1921; I haven't had anything to do with any purchasing of motors for a number of years.

The water capacity of the Haag machines such as were used with this Exhibit 15 was, I think, somewheres between 15 and 20 gallons. A normal load of clothes for that machine was about 5 pounds—4, 4 to 5 pounds; that is dry clothes.

XQ35. Would the machine wash faster or slower as the load got larger?

A35. Well, the motor was supposed to be sufficiently strong to draw a load equally at all times except in the case of an overload.

XQ36. Did you ever see one of those Haag machines operated with a load of, say, 2 pounds of clothes?

A36. No, never did.

XQ37. So you really don't know whether it would wash faster or slower, with two pounds?

A37. No, I don't, only my experience with similar machines, because I never operated a Haag with 2 pounds of clothes in it.

XQ38. Did you operate any machine with 2 pounds of clothes in it?

A38. Not by exact poundage.

XQ39. Well approximately, I mean?

A39. Well, 2 pounds of clothes would be less than two sheets, average size sheets, 81 by 90.

947 XQ40. And did you ever operate a machine with such a load?

A40. Yes, in the case of socks, or something like that.

XQ41. Did it wash faster or slower with that load than with the heavier load?

A41. There would be more agitation on the lighter load than there would with the heavier load, naturally agitates the water more and have more of a tendency to turn the clothes over.

XQ42. And that would wash them faster, would it not?

A42. Oh, surely.

(Exhibits referred to in deposition of Mr. Weeks, Plaintiff's Deposition Exhibits 9, 10, 11, 12, 13, 16, 18, 14, 15,

marked Plaintiff's Exhibits 38, 39, 40, 41, 42, 43, 44, 45, and 46 respectively for identification and are received in evidence.)

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948 WALTER BONES, having been previously sworn, called in rebuttal by plaintiff, testified as follows:

Direct Examination.

By Mr. Lane:

Q. Mr. Bones, will you put the curtains in these machines?
A. Yes, sir.

Mr. Bristol: Let us weigh them, please.

(The two bundles of clothes are handed to counsel.)

Mr. Bristol: This first bundle weighs three and one-half ounces. The second bundle weighs three and five-eighths ounces.

The Witness: The tub with the glass side walls is Model 32 and the other is Model 30. Both tubs are filled with water. The glass side walled tub is filled with cold water and the other machine is filled with hot water. Model 30 has the gyrator with the fins the same as used on our very first machine.

Mr. Lane: It was actually taken, Your Honor, from Plaintiff's Exhibit No. 10.

Mr. Bristol: We can weigh the soap box before and after, Mr. Lane. It weighs 26½ ounces before any soap is added to the water.

The Witness: I started the water action and placed soap in the machine following the directions contained on
949 the box to add soap until you have from two to three inches of suds on top of the water. Simply following the directions they give on the outside of the box itself.

Mr. Lane: I might say that we are using Rinso soap. The directions are, "Use enough Rinso to maintain two or three inches of suds throughout the washing."

The Witness: I placed the towels in the wash and will run them a minute and a half to two minutes. I am now placing towels in the other water with clear water to show the action of the rollover, to show that the towels travel from one side to the other, in at the top and out at the bottom. The action is the same in both tubs as nearly as I can see. The soap helps in preventing a contact with the agitator in the operation of these machines. The garments when washed in a tub of water with soap suds have a tendency to be carried to the top

and floated with the suds. You see through the glass side walled tub and see the garments, the curtains rolling, lifting, traveling down and outward with a continuous rolling motion, rollover, just the same as they are being washed in the machine where we have the suds and can't see it. After washing the curtains a little over a minute and three-quarters we take the curtains out. I have said towels once or twice in my testimony. I mean curtains. They are lace curtains in a very fragile condition.

That one that I am taking out now is from the tub of cold water. I am showing that the holes are in the same
950 condition as when they went in. I am not sure about this particular pair, but they are old curtains. They are fragile. There are not any holes in them that weren't in there when I first put them into the tub. We never dared to wash them in the old peg-dolly type machine. The pegs would tear the garments. That is true of the rub-board type, too.

Q. Now that you have wrung them out, what is the condition of those clothes as far as cleanliness is concerned? I am talking about the clothes that came out of the device where you are washing them. A. Very nice.

I now place them over on the drying rack and as soon as I have removed the other garments I will hang them up.

I now have two loads of garments, towels principally, one for each tub. I will start the water action in both machines—

Mr. Bristol: Will you give me the weights, please?

The Witness: (handing clothes to Defendant's counsel) If you keep on my water will be all cooled off.

Mr. Bristol: Does this all go in one machine?

The Witness: This all goes in this first machine.

Mr. Bristol: (weighing the bundle) Two pounds even for this load, Mr. Bones.

The Witness: I now proceed to place the garments in the tub with the glass side wall, and you can see the rapid
951 roll over. I am placing in here some colored rubbers that act the same as tracer cloth. The way I am putting those in there is the way I advise wash-women to do it; and continue to do it as long as it continues to roll. Now, we will put a load in the other machine.

Mr. Bristol: (weighing the bundle) One pound thirteen and three-quarters ounces.

The Witness: I am now placing the load in the Model 30 with the suds. We will run these soiled garments eight minutes.

Q. Have you got a few more? It isn't quite as much as in the other tub. I want to get a balance. I want it to be the same weight as the other.

A. Here is a couple more.

Mr. Bristol: That is going to a be a little heavy.

Mr. Lane: That is all right.

Mr. Bristol: Six ounces more. That is two pounds, three and three-quarters ounces.

The Witness: You can see in the machine with the suds it has the same rollover as the other machine. You can't see down in the tub; all you can see is the ends of the garments coming to the top and going down at the center. I would say there is a more rapid rollover in the tub where the washing is going on than in the other. The clothes move somewhat faster on account of the soap; the soap helps to lift the garments in the water. I will put in a rubber now. I
952 never tried that before. You can see in the glass tub machine there is a hole right down to the bottom. You can even see the fin working it. That is what is spoken of in the General Electric advertising as the "rapid rollover" what you see there now. These machines are operating substantially the way I recommend customers use them for rapid operations and the best washing.

Mr. Bristol: How much time has elapsed now?

Mr. Kenerson: A little over four minutes.

The Witness: We usually give these about eight minutes, but I think they are all right now after six and three-quarters minutes. I am now taking the clothes out of the tub. In these operations, the clothes are kept well distributed throughout the tub by the currents of water; that is the same as you see it right there in the motion of the water through the glass. They are kept pretty well untangled so the water can get at them.

I think the clothes are fairly clean. I will hang them out on a line so that we can see them after they are hung out.

Q. I do not believe you need to bother with washing the shirts, but you can put the dirty overalls in and wash them. A. All right.

Mr. Bristol: May we have those overalls, please, to weigh them?

Mr. Lane: Yes, sir.

(Overalls are handed to Mr. Bristol for weighing.)

Q. How does that operation compare with what you
953 have seen in a great many homes in the operation of these Maytag machines?

A. It is the way we tell the boys to put on a demonstration of the machine, as near as possible.

Q. You have operated this machine in the actual washing with the dished impeller like the shape of the patent?

A. Yes, sir.

Q. I am going to ask you to put in in connection with the actual washing of the overalls the one which has the slightly changed form with the [disk] so as to show the difference in operation of the two machines.

A. Either one, it doesn't make any difference (changing the impeller). In a home demonstration we always recommend soaking the clothes for a half hour or longer. It helps to loosen the dirt. I didn't do that in this case.

Q. You put them in in their dirty condition and then washed them seven minutes, as I understand it?

A. Yes, sir.

Q. How long would they have carried on a washing operation with the rub-board type machine?

A. It would take about an average of thirty minutes.

Q. What is the fact concerning the speed of washing in one of these machines as compared with the speed of the old rub-board type, from your personal knowledge?

A. It depends on the load. The time is cut, in other words, to as low as a minute and a half on lace cur-
954 tains, three minutes on rag rugs, and not to exceed twelve minutes on the dirtiest overalls, or jackets, mechanic's clothes.

Q. How does that compare with the attempt to wash in the old rub-board tub?

A. We always used to figure thirty minutes or longer with the average load of garments.

Q. Thirty minutes? A. Or longer.

Mr. Lane: Did you weigh them, Mr. Bristol?

Mr. Bristol: The overalls weigh one pound and nine ounces.

Mr. Lane: I would like to exhibit the overalls to the Court.

Mr. Bristol: Are these the same ones washed in the court room the other day?

Mr. Lane: No, they are not. We had those over here and they are rather clean. I was surprised to see them look so well. I would like to have you examine these to see the condition they are in. They have shellac and paint and grease and rust on them.

Q. It was suggested that you used kerosene in connection with the others. Have you used any kerosene on these at all?
A. No, sir.
Q. Or any other thing?
A. Nothing. If I was in the home I would recommend the use of kerosene on them because it washes quicker and better. Soaking would help.
955 Q. That is a common expedient for taking grease out of anything, is it not? A. Yes.
Q. Commonly used? A. Yes.

Mr. Bristol: Will you keep track of the number of pails of water?

Mr. Lane: It is right up to the water line.

Mr. Bristol: How many gallons to that water line?

The Witness: I have never measured it in gallons.

Mr. Bristol: Then will you count the pails?

Mr. Lane: Just measure the space you have there to the water line, and with a little mathematical calculation you will have the exact contents.

The Witness: Or we can drain it later and show you by measuring it.

Mr. Lane: You will agree that the directions I read were correct?

Mr. Bristol: I will agree you read the directions correctly. I am not sure whether the directions are correct or not. The soap box and soap before the washing of the curtains weighed 26½ ounces. After the soap had been poured into the tub the box and soap weighed 19¾ ounces, giving by the difference 6¾ ounces as the amount put into the tub.
Q. Do you recommend any particular kind of soap for the machine?
A. Use any kind of soap. I usually use bar soap.
956 Q. Why didn't you use it today? Because of my request?

A. I got a sealed package so there would be no question about it. I have now followed the directions and have placed soap in the tub until we have a suds on top, probably an inch and a half or two inches thick. I am now placing the overalls in the machine.

Mr. Bristol: The overalls weighed one pound nine ounces.

The Witness: We will wash those ten minutes.

Mr. Lane: Now, will you step aside, Mr. Bones, while the overalls are washing, and I would like to have Mr. Kenerson demonstrate these two machines under the sheets (indicating.)

(Witness temporarily excused.)

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957 WILLIAM H. KENERSON, having been previously sworn, was recalled on rebuttal for the Plaintiff, and testified as follows:

Direct Examination.

By Mr. Lane:

Q. Mr. Kenerson, what have you here under the sheets?

A. I have a couple of the Davis machines.

Q. They are substantially identical with the 2 A machine offered in evidence by the Defendant here, are they?

A. Yes, sir.

Q. Will you take these two machines and set them both in operation at the same time?

A. (indicating) I will take the sheet off the first one of these, the tub of which is filled with water up to within about three inches of the top of the tub.

Q. Does that have all of the blades on the rub-board?

A. Yes, sir; this has twelve blades.

Q. There was one missing from the one they operated in the larger and better demonstration?

A. Yes. The tub is considerable warped, the cover particularly, (indicating).

958 Q. Now, you have done what, Professor?

A. I have closed the cover and in a moment I shall start the oscillator in motion.

Q. Tell the condition of the center post that supports the rub board?

A. The squared rod sticking up through the shaft, which is the driving means for the rub board underneath, is now projecting to the top of the rod itself about 7½ inches and it is free to go up and down as you can see. Now, I will start it in motion and we will see what happens (witness turns on

motor). I will call minutes as time goes on from the beginning. It is now beginning to work down slowly. The first minute has not expired and it has worked down so that the top is about 2 inches above the point where it was measured before, making a drop of 4½ inches in the first minute.

Q. How does that bring that scrub board with respect to the bottom of the tub?

A. Very close to the bottom of the tub. It is now getting down as far as it can go because of the wire that—

Q. (Interrupting) What is the effect on the clothes when that action takes place?

959 A. The effect on the clothes is to bring the rub board down into rubbing contact with them at all times and to compress them and squeeze them,—just what the rub boards are supposed to do.

Q. The harder work, insofar as compressing of the clothes and working on the mass as distinguished from rolling them over?

A. It is a totally different process, of course.

Q. How does the machine operate on the clothes with respect to a mass or whether they are rolled over?

A. It rubs on the top of the mass of clothes which are underneath and at the same time moves the clothes more or less through the water but in a substantial mass.

Q. Is there any substantial turn-over of the clothes at any point? A. No, sir, there is not.

Q. You have operated this machine repeatedly?

A. I have in my own laboratory.

Q. Have you another machine of the same kind and type so there will be no question of one machine operating in that way?

A. Yes, sir. This one is the same type, in a little better condition and the cover has been cut away so that one can see the operation.

960 Q. Now, in order to close that device you must hold your rub board up in contact with the cover?

A. Yes; otherwise it would interfere.

Q. You cannot get it in? A. Yes.

Q. And there are twelve rubbing cleats on this rub board are there not?

A. Yes, sir; two of them a little longer than the other ten.

Q. And that is the way they were shown on the 2 A machine? A. Yes, sir.

Q. In evidence?

A. That is the way I have always operated them in my laboratory. Now, I will close the partial cover and let the rub board down on the surface of the water as you see, free to move. I will hold it in place with this clamp.

Q. That is not the same kind of mechanism for locking the cover in the other machine, is it?

A. Yes; the other one did not have to have one because you had a clip there and there was enough friction to hold it. This being a partial cover you have to use that. That is the usual way to operate it. (indicating other machine).

Q. Now, will you start that in operation?

A. (Witness starts motor). This one, the stem is a little shorter so it starts just a little slower and the water in the tub may be a fraction of an inch above the water in the other tub. I will start it in motion and I will call a minute
961 from the time the thing starts. You see, it is beginning to go down. We can now see the surface of the water and see the progress it makes going down. It appears to be going a little faster than the other one. The one that I had in my laboratory, a third one,—I do not think it was one of these—operated in the same way. It has reached the limit of its travel now and that was just forty-five seconds.

Q. You have read the testimony of Mr. Doughty in which he said that was just the way it acted and the trouble was it pulled down and pressed the clothes and dragged them down and got no turn-over?

A. Yes.

Q. And that is way you found it? A. I did.

Q. Now, will you put some clothes in that machine and show how that machine works when clothes are put in the tub?

A. I have to raise the rub board in order to open the top of the tub. Now, I will put in a collection of towels here.

Mr. Bristol: Have you the weight?

The Witness: No, I don't have. (Witness puts bundle of towels in machine). I am pushing them under the water to get them wet.

Q. About how long are those machines supposed to be operated to attempt to do a washing in them, Professor?
962 A. At least a half hour. It depends somewhat on the character of clothes. One could not wash overalls, such as we have in that other machine. At least, that is my experience, no matter how long you run them.

Q. How about washing silks and things of that kind, lingerie? A. That would be impossible.

Q. Why?

A. It would tear them. The rubbing and the squeezing and compressing would tear and injure them.

Now, I have filled the tub comfortably full of towels. Now, I will put the cover down as before. Now, again we will start

up, (witness starts motor), and I will call the minutes once more. It is beginning to move down. Half a minute. It has moved down about 2 inches. Perhaps it was observed before I closed the cover that this rub board—the whole tub is in rather better condition, that is less warped out of shape than the other one. One minute.

Q. These tubs both have the same interior corrugations that they had in all the machines that you have seen of this type?

A. All that I have seen, yes, sir.

It is obvious that this machine is beginning to work a little harder as it presses down on the clothes. You can notice it from the action of the mechanism. Now, you begin to
963 see the clothes work up on top of the rub board. It is a minute and a half now and it is now within less than an inch of the limit of travel that they can go down. It is working rather harder now.

Q. Will you tell just what is taking place there with respect to the clothes there underneath that thing, that the Court is looking at?

A. Two minutes. The clothes have been squeezed down toward the bottom of the tub and are now being ground around on the bottom corrugations and of course slipping more or less on the rub board itself. Some of them are being squeezed around on the sides and are being lashed around in the water. Now, they have got up in the free zone above the rub board. Some, you see, are over, I am talking about two or three of them. There are a number of them now that are absolutely free, that have worked up above the rub board and they will come more and more. It has gone down now to about within five eighths of an inch, as far as it can go; in other words it has gone down as far as it can go.

Q. That is it is pressing the clothes as much as it can press them and work? A. Yes.

Q. How does that operation that you see there com-
964 pare with an operation of the Davis patent structure?

A. Well, I think it is operating in accordance with the Davis patent structure.

Q. And it is the only way that structure could operate?

A. I don't know of any other way it could operate.

Q. Have you seen this operation?

A. (Interrupting) The time is up on our other machine.

Q. Have you repeatedly tried that operation in these Davis machines? A. Yes, I have.

Q. On how many occasions would you say you have actually done washing in that machine or one like that?

A. Well, I had a machine like that in my laboratory at Brown University and I made repeated washings, I don't remember how many but of the order of twenty, perhaps.

Q. Was it the same construction in all respects, as far as you can see?

A. The construction was the same and the operation was the same.

Q. And the rub boards all went down in the same way that they did in these two machines exhibited here?

A. The one rubboard that I had did go down that way, and did every time that I operated it.

965 The Court: Do you account for the difference between the operation of this one machine and the one in the Baltimore, by the absence of those two cleats in the rub board in the one at the Baltimore?

The Witness: No, sir; there is a difference.

The Court: That would hardly be enough, would it?

The Witness: Well, I don't know; it surprised me to see that the thing stood up that way; I don't know how to account for it.

Mr. Lane: Unless it was a little rusty in the joints somewhere.

(Witness temporarily excused.)

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966 WALTER BONES, Resumed the stand.

Direct Examination.

Resumed By Mr. Lane:

I washed the overalls. I think they are in fairly good condition considering the fact that they were washed without treating them or soaking or anything; just put them in the water and washed them. I can see the paint spots are on there. The clothes have not been injured or torn at all in the operation and they came out, I think very nice, considering when they are dry they will be very good.

The Witness: The dirt, the coloring of the overalls has turned the water real dark showing that they have had a real washing. That took just about ten minutes.

Cross-Examination.

By Mr. Bristol:

Q. Mr. Bones, our weighing showed for the box and soap before the overall washing 19¾ ounces; after the overall

washing 13½ ounces, giving, by difference, 6¼ ounces of soap used in the overall washing. Is that about fair?

A. Well, it depends entirely on the water. Real hard water it requires more soap. They say "add soap until you have a good suds."

Q. Can't you give us the number of gallons in that machine up to the water line?

A. Yes; if you have something to measure it I will be very glad to drain it and refill it.

Q. You cannot tell me what it is without doing all that?

A. No, sir, I never measured that.

967 Q. How do you account for the frayed condition of the bottoms of the legs of the overalls?

A. That is the condition they were in when I received them.

Q. How many pounds per hour of clothes will you be able to wash at the same rate that you were washing that 2 pounds 3 and ¾ ounces of towels?

A. It would depend entirely upon the garment.

Q. Can't you calculate that?

A. No. If you were washing rag rugs, for instance—

Q. I don't think you heard my question. In your washing of the towels you used a load of 2 pounds 3 and ¾ ounces according to our weighing. If you had just a whole lot more of similar towels and you washed them at the same rate how many could you get washed in an hour?

A. Well, I have never weighed clothes and I never made a test of that kind and I just wouldn't know; it would be a guess on my part.

Q. It would be considerably less than the 50 pounds per hour that you advertise, wouldn't it?

A. I could not say as to that.

Q. It would be about 18 pounds?

A. That would be probably true on that particular garment but on the average family wash, you are washing clothes,

968 sheets, for instance, pillow cases 2 minutes, men's shirts about 8 minutes, so that you can wash a lot in an hour. We handle the average family wash in about one hour's time.

Q. And what was the time on the overall washing that you just did?

A. Mr. Loftus had the time on that.

Mr. Loftus: 11 minutes.

Mr. Bristol: Who was keeping that time?

Mr. Kenerson: I was keeping time, but I was busy over at the other corner part of the time.

Mr. Lane: I kept the time and it was just a little under 11 minutes.

Mr. Loftus: It was eleven minutes.

Mr. Bristol: Mr. Taggart says 15 minutes and Mr. Loftus said 10. What is it?

Mr. Kenerson: I know it was not 15 because I came back and told him to stop and it was not 15.

Mr. Bristol: What was it then?

Mr. Kenerson: 14.

Mr. Bristol: And it was still running?

Mr. Kenerson: No, sir.

Mr. Loftus: I held it on 11 minutes.

Q. Mr. Bones, do you mean to assert that with soap in the water the fabrics will not mat down on the Maytag agitator as you saw them in the demonstrations at the Baltimore Hotel?

A. I did not say that. I think it will handle a heavier load with soap suds than it will with clear water.

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969 WILLIAM H. KENERSON, Resumed the Stand.

Direct Examination Resumed.

By Mr. Lane:

Q. Professor Taggart estimated the movement of the tracer cloth in an unloaded Snyder machine to be one mile per hour, a slow ambling walk and stated that this was the measure of the violence of the velocity of the Snyder operations of the Maytag machine. Do you agree with that statement and if not state why?

A. No. It is not a measure of the velocity of the currents themselves; it is a measure of the result produced by these violently moving currents, some in one direction and some in the other. They frequently oppose each other, in fact that is the whole principle of the washing operation and while the cloth itself, as a whole, moves through the water at perhaps the rate that Professor Taggart suggested—I have not counted it—it is all the time moving, parts of it are moving, folding, bending, whipping and currents are going through it and in different directions while it is thus progressing in the water, so that is in no way a measure of the velocity of the currents themselves but merely the velocity of the cloth in opposition to the currents. It is quite

conceivable that very rapid currents might hit it in
970 opposite directions and it will stand absolutely still and yet it will be subjected to a very violent washing action.

Q. Now, Professor Taggart said in answer to my questions in the Brooklyn Edison case when I asked him "do you know what the carrying capacity of the water in carrying the clothes around the tub, around in it, is when the machine is oscillated at 45," and he said no. Then I asked him as to whether it would not be about five times as great when you increased the speed of oscillation some 15 oscillations per minute and he said that it would get about five times as great carrying capacity when oscillated with that increased speed of fifteen oscillations. Do you agree with that?

A. Yes; I think his judgment is good. We know that the carrying capacity greatly increases with increase in velocity very much more rapidly than the direct velocity involved and I would think that was a fair estimate, yes, sir.

Q. So that you agree with him that by increasing the oscillation 15 per minute you increase the carrying capacity of the water five times?

A. Well, from 45 to 60, yes, sir.

Mr. Bristol: May I have a reference to the place you read from there as to Professor Taggart's testimony?

Mr. Loftus: Pages 300 and 301.

971 Q. Now Professor Kenerson, you have already shown your familiarity with the Davis machine and the machine of the Davis patent as exemplified by these two exhibits here in the court room and the work that you did there in your own washing of clothes. In cross examining Professor Taggart said that the machine shown in the Davis patent, not withstanding the statement which appears on page 2 "Thus the fabrics will be thoroughly cleaned without being pulled and distorted, the circulation of the water through the fabrics resulting in the removal of the dirt therefrom." He said the machine would not work that way. Do you agree with him?

A. I do not think it will work that way.

Mr. Bristol: I object to that as a misquotation of Professor Taggart's testimony in this case.

Mr. Lane: Let us go to the testimony, that is the quickest way to settle that question. I don't like to have you say I misquoted things very well because I am not in that habit, Mr. Bristol. He not only testified to that effect in this case

but he testified to that in the Brooklyn Edison case. I
972 read from the testimony of Professor Taggart on page 446 of the record which is as follows "Now, turning to the Davis patent, on Page 2 it is stated, first column, Line 1, 'Thus the fabrics will be thoroughly cleaned without being pulled and distorted, the circulation of the water through the fabrics resulting in the removal of the dirt therefrom.' In quoting that statement to you in the Brooklyn Edison case, I asked you if that was in accordance with your understanding of the way that machine could operate, without being pulled or distorted, and your answer was, 'No, I don't think any fabric can be washed without distortion of the fabric sufficient to force the water from between the threads.' The next question was, 'If I understand your testimony correctly, the clothes in the machine are washed if at all by rubbing, pounding, squeezing, and dragging?' To which you answered 'Yes'. Is that your understanding of the operation of the Davis machine. A. That is correct."

Q. Is that likewise your understanding of the machine, Professor Kenerson? A. Yes, it is.

Q. Again I asked him "By the method of rubbing, pounding, squeezing, and dragging as distinguished from
973 mere circulation of water? A. That is right." Do you agree with that?

A. I found it so, yes, sir.

Q. Now, in view of the fact the Court of Appeals has referred to the disclosure of the Davis patent we have testimony here for the first time to show in actual demonstrations how this machine worked. What do you say as to whether this machine operates by the mere circulation of water through the clothes as distinguished from dragging, compressing and squeezing and rubbing them just like the old fashioned rub board did?

A. It operates substantially as the old rub boards did.

Q. And it does not operate in accordance with the disclosures of the Davis patent? A. I did not so find it.

Q. Now then, will you turn to the Jardine patent—I am selecting only those which Professor Taggart talked about as closest—and while he made no distinction between them I think perhaps we may. You have studied that patent, and understand it thoroughly, have you not?

A. I have studied it and I think understand it thoroughly.

Q. Is there anything in that patent of any character to suggest or intimate the washing of clothes largely by water

action as distinguished from rubbing, pounding,
974 dragging and squeezing the clothes,—compressing them in the operation?

A. I see nothing in it that describes how the washing operation takes place.

Q. From the disclosure of the drawings itself, what have you to say from your familiarity with washing machines, what operation does take place in that machine?

A. I know, with machines of the type that are illustrated in the drawing, that they do operate as those old machines all did, by pressing and squeezing and rubbing and pulling the goods through the water.

Q. And have you seen substantially similar constructions to that shown in the Jardine patent where just that statement is repeatedly made concerning the operation of that machine?

A. I have seen it except that in the construction of the device to which this patent is aimed, its purpose is to keep the goods from getting under the thing. In fact, that is one of the elements which to me, shows that the intention of the mechanism is to cause squeezing and pressing; otherwise there would be no tendency for the goods to get underneath there.

Q. In other words the machine is loaded for the washing operation as you saw it in that machine and they are rubbed and dragged and pounded and squeezed and compressed; otherwise the clothes would not catch under
975 the impeller and there would be no necessity for that device?

A. That is my opinion, yes, sir.

Q. You noticed that in the exhibit they put on and operated and the speed they operated it at over at the Hotel Baltimore they did not use those devices, didn't you?

A. Yes.

Q. Why wasn't that necessary in that particular demonstration they made there?

A. Because at the speed they were running, the tendency would be, if there was any movement at all, and it would work whether it was dry or wet—would be to throw it out past that place where it would work underneath, but if it were loaded the tendency would be to press underneath as I have demonstrated myself in my own laboratory.

Q. I notice that there are seventeen mentions of the word dolly in that patent. What does that indicate to your mind so far as the operation of the machine is concerned, so far as Nomenclature is concerned?

A. It would seem to indicate that it operated as all dollies did, by dragging or squeezing or pressing the goods together. That is my understanding of the meaning of the word dolly.

Q. Is there the slightest suggestion, in your opinion, of any operation of that machine in such a way as to
976 create the rapid, violent flowing currents that are created or described in the Snyder patent?

A. I can find nothing of that character.

Q. Now then, taking the Henin patent, what is there in that that suggests any such operation as disclosed in the Snyder patent?

A. Nothing. In fact, the whole construction would indicate quite the reverse.

Q. I notice that that machine has on it a crank at the top which is mounted on the same shaft as the pulleys for driving the shaft? A. Yes, sir.

Q. What does that indicate to your mind as to the speed of operation of the device?

A. That operation by hand is an alternative one and necessariiy cannot be a very rapid one because a person cannot put it in rapid operation for a long enough time to do a washing in it.

Q. How fast could a woman, an ordinary housewife, from your observation keep up the operation of rotation for a period of thirty minutes actual speed at which it would oscillate?

A. I don't know; I think it would take a pretty husky woman to run it thirty minutes at any reasonable speed.

Q. I mean what would be the rate of speed that you
977 could normally work it by hand; you have done it yourself?

A. I have done it myself and the rate I saw it from over here, probably thirty would be the maximum. You could not maintain it any faster than that for any length of time.

Q. I notice in the patent, Claim 1 of Henin, the parts that are attached to the central portion of the base immediately adjacent to the hub are called beaters. What does that disclose as far as that patent is concerned?

A. That they were for the purpose of squeezing or beating the goods in that machine.

Q. In that machine how close does the slatted [disk], the slatted construction of the column come to the interior of the tub in which it is mounted?

A. In the diagram it would be indicated that it came as close to the outside of the tub as it could and be feasible to operate.

Q. You could not have it closer and operate it?

A. No, sir; I think it is indicated and it is intended to run close to the outside of the tub.

Q. You are familiar with the Hermance patent, aren't you? A. Yes, sir.

Q. That is an old washing machine patent of 1869?

978 A. Yes, it is called a wash boiler but it is really a washing machine; called a washing machine on the other page.

Q. How is it designed to be used as shown by the disclosure?

A. It is supposed to be placed on top of the stove and the contents of the tub stirred up with the handle which is placed on top.

Q. Is there anything in that construction which suggests any such operation as disclosed in the Snyder patent? If so, so state; if not, state why?

A. Well, I cannot find anything of the sort. The intent apparently is to keep the clothes from getting down on the bottom of the tub and getting burned and at the same time act as a substitute for the old stick which was used to stir the goods up.

Q. I notice on the second column there the first paragraph that it says "The clothes to be washed are laid on the cleats or ribs b b on the wheel E, said ribs holding the clothes up from the wheel, thus preventing them from clogging up the holes or perforations in the wheel, but allowing at all times a free passage of the water through the same." What would that indicate to you as to the operation of the water and where it would take place?

A. Below the wheel. I think the purpose of this tub, as I understand it, was to permit rather free boiling of

979 the water on the top of the stove but at the same time keep the clothes in virtual suspension above that boiling zone so they would not be burned by coming in contact with the hot bottom.

Q. You used the term "virtual suspension." Virtually suspended by what?

A. By the rack, the rubbing disk on the bottom of the tub.

Q. Is there anything in your mind in the slightest way indicating the same operation as disclosed and described in the Snyder patent?

A. I cannot see any connection whatever.

Q. In that structure how close does the support for the clothes come to the edges of the tub?

A. Again, pretty close to the outside edge, the intent being, I think, to keep the clothes away from the bottom.

Q. You have seen the defendant operate one of those Miller machines with the porcelain tub and I heard Professor Taggart attempt to describe the operation which I could not see. Will you state how that tracer cloth, which as I observed was the only one used, acted in the operation of that device, so far as the movement in the water is concerned?

A. Well, I watched it as carefully as I could and made some notes at the time on the operation of that and the other machines also and I really was unable to see
980 the operation that Professor Taggart described and which appeared in the printed record.

Q. What did you see? A. You are now speaking about the Miller, the old Miller.

Q. The old Miller machine?

A. Well, I noticed that the tracer cloth, the handkerchief hung very near the top of the impeller and that for the entire time that the tub was in operation, that is 7 minutes, it never moved down from the surface of the water two inches. I recall that he stated that most of the agitation was near the top but not once, and I observed it every moment of that 7 minutes, did it follow the path which he described in the language "out, down, in and up" or substantially that language. My observation was that it stuck—my note was that the tracer hung near the top for seven minutes, the entire time of operation and that it never moved below the surface two inches.

Q. I am asking you, you are answering with respect to the actual machine which they brought in, the full size machine as distinguished from these so-called experiments, where they had a 3 ply arrangement?

A. That is the one to which I refer, yes, sir.

Q. Now, if the testimony shows, of the men who actually made and sold the machine, that in that machine the
981 rub board pressed down and penetrated the clothes and grabbed a hold of them and swung them out back and forth as a mass and that was the only way in which the clothes could be washed, from your observation of the operation of the machine over at the Hotel Baltimore do you agree with that testimony?

A. Yes; I believe that was the obvious way that it worked and that was the intent.

Q. You saw Professor Taggart have a machine which resembles this 1900 Form 1 machines having the same number of cleets I think, and heard him say that one was missing over at the Baltimore Hotel, did you not?

A. I did.

Q. And you saw him put a little card on and hitch by a paper clip, didn't you? A. I did.
Q. You saw him time it from time to time? A. I did.
Q. You saw that as he operated it it did not go down?
A. That is true.
Q. And he so stated on the record? A. Yes, sir.
Q. Have you ever seen one of these machines, any one of the machines that you tried, operate at any time in any such way?
A. No, sir, I never have.
982 Q. Do you know how to account for any such operation as took place there? A. I do not, sir.
Q. You did notice that there was one of the blades off that machine, didn't you? A. Yes, sir.
Q. You don't know whether that would account for it or not? A. No, sir; I have not had any experience about that.
Q. If the device were rusty or clogged up in any way, might that prevent the thing acting as it was intended to act?
A. It might.

Q. It must be some such thing? A. There was a cause.

Mr. Bristol: I object to what it must have been.

The Court: Sustained.

Mr. Lane: Have you got the Miller patent?

Mr. Geppert: Yes, sir.

Mr. Bristol: What is the Miller patent in rebuttal of?

Mr. Lane: It is in rebuttal of the Miller machine that was put on as an exhibit.

I want to call attention to the fact that the machine
983 that has been operated by Professor Kenerson with the complete cover has been offered in evidence in connection with Mr. Weeks' deposition as Plaintiff's Exhibit 47.

Mr. Bristol: Now, if your Honor please that exhibit, as it now stands, is not at all in the condition in which it was at the time it was marked in the deposition. It was all falling to pieces and the bottom was out of it and it was a complete wreck.

Mr. Lane: What I have done with it, without any misunderstanding, I sent it to a cooper without any instructions except to put it together so we could ship it and bring it

down here. He put a new hoop on it. You can see that perfectly plain.

Mr. Bristol: I object to the offer of the machine because of its changed condition since the time it was marked but at the proper time I would like to cross examine Professor Kenerson about some things which I think will—

The Court: The objection is overruled and exception allowed.

(Plaintiff's Exhibit 47 heretofore marked for identification received in evidence).

Mr. Lane: I also offer in evidence the second machine of the 1900 make which is substantially identical except
984 for this little re-coopering job as Plaintiff's Exhibit 48; that is the one in which he operated both with and without clothes in it.

Mr. Bristol: Objected to as not proved in any way.

The Court: Overruled, exception allowed.

(Machine referred to marked for identification Plaintiff's Exhibit 48 and received in evidence).

Q. Now, how does this machine compare in construction and operation, as far as you understand the Davis patent to show?

A. I understand it to embody the device set forth in the patent drawing.

Q. And is that same thing true of Plaintiff's Exhibit 47?

A. Yes, sir.

Q. Now, in this Miller patent which has been offered in evidence as Deposition Cross Exhibit 10 and here as Plaintiff's Exhibit 22 it is statetd "that the journal portion of the latter is however, somewhat longer than the bearing in order that it shall be capable of a certain amount of vertical or up-and-down adjustment while in operation in order to accommodate itself easily to the quantity of the articles being washed and also to the inequalities of thickness thereof, which arise constantly from their change of position." Do you agree with that?

A. What patent is that?

985 Q. That is the patent on Miller. I am just asking you if you agree with that statement concerning that operation? A. Yes, I do.

Q. In this patent it is stated in referring to the ribs on the under surface of the rub board "These ribs have their sides inclined toward each other from their bases to their

bottoms, so that the intervals between them will become narrower toward the disk bottom, thereby facilitating the rubbing action of the ribs." Is that true of the structure that you saw operated the other day at the Baltimore Hotel?

A. Yes, sir.

Q. Now, as to the Doughty and Davis structure disclosed in their patent, you are familiar with that?

A. Yes, sir.

Q. Will you state how the construction there shown and described compares with the structure of the Snyder invention as disclosed in the drawings of the patent in suit and the description thereof and the operation?

A. I do not find any comparison to make, sir; they are entirely different in their operation.

Q. You point out why, both as to construction and operation?

A. Well, in the first place this is a rub board, bottom rub board type, this specific patent being directed to an
986 arrangement of the vanes on the agitator which is non symmetrical the purpose being to prevent the goods, or at least to minimize the tangling of the goods as they are rubbed and stirred by the board equipped with these vanes. Of course there is nothing of that sort contemplated, as I understand it, in the Snyder disclosure.

Q. In the Snyder disclosure the blades are equally spaced, are they not?

A. Well, yes, and for a totally different purpose, it seems to me.

Q. You have operated these machines, have you not?

A. The Doughty and Davis?

Q. Yes. A. Yes, sir.

Q. What is the result, so far as the actual washing of clothes is concerned in these machines as compared with the actual washing in the Maytag machine?

A. As a matter of fact I did make a great many actual washings in that Doughty and Davis machine and I have run them perhaps a half hour and found that in most
987 cases the goods would tangle up badly so that one would have to actually unbraid them from the center of the machine, that is if they were loaded with a substantial amount of goods. If they were not I did not get any considerable washing action. It was more a soaking action than anything else. If I loaded them enough so there could be an actual pressure between the moving vane and the goods then I would get a washing action where that rubbing took place but I would have to constantly stir it up or unbraid them in order to get a washing action all through the goods.

Q. Was that an operation on clothes as a mass on the exterior or did it keep them well distributed through the tub?

A. Well, the fact is that I made very frequent records of the progress of individual garments through the tub; in fact I did here in Kansas City when Professor Taggart was describing the progress of the goods and I made, at home and here, numerous records of the path which individual garments would take through that machine and I never have been able to find the slightest indication of such a rapid turn-over as has been described or even insinuated.

988 It does not exist. I can quote examples both from the experience here in Kansas City and at home, of where the goods went in absolutely the opposite direction from what is contemplated and described in so many words in the testimony.

Q. You have seen the advertising of the General Electric Company that has been referred to in court, haven't you, as to free roll-over and so forth?

A. I have heard it and seen it, yes, sir.

Q. Did you see any such action take place in the demonstrations of the so-called defendant's machine in the demonstrations at the Baltimore Hotel? A. No.

Q. Did you see any such action as is contemplated in the Snyder patent and demonstrations of the Snyder machine, the glass tub machine at the Baltimore Hotel?

A. To a very very slight extent; not what is contemplated in the patent at all.

Q. Did you see any operation over there that compares at all with what you understand the operation of the Jardine construction to be?

A. No, sir.

Q. Why not?

989 A. In the first place the machine in my opinion was operated much too rapidly for what was common at the time of Jardine. This was referred to by Jardine as a dolly and a dolly is a thing to grab and move things about in a tub, as I understand it, and if that is the case that machine over there did, in fact, when it was operated with a load, agitate the goods in the tub but there was no roll over and again I have notes of specific pieces of goods in that model over there, the glass tub, that did not take the roll-over action at all, as described.

Q. Professor Taggart has testified with respect to the Davis, the Jardine, the Miller, the Henin, the Doughty and Davis, all of these machines depended for their washing operation upon the rubbing, pounding, squeezing, dragging, and compressing of the clothes. Do you agree with him in that statement?

A. Yes, sir, I do.

Q. Now, he has taken a somewhat similar position with respect to the invention disclosed in the Snyder patent and in the defendant's machine. Do you agree with him in that regard?

A. No, not if it is properly loaded. For example it would be impossible I think for me, in words—I could not speak rapidly enough to describe the upwards, downward, inward, outward path of one of these towels in that machine
990 and yet Professor Taggart, who speaks very slowly, would sometimes pause at least fifteen seconds of time by my watch between words in describing the progress of that cycle. Now, I do not consider that a rapid roll.

Q. How does the Maytag machine made under the Snyder patent compare in construction and operations in the washing of clothes with the defendant's machine here in evidence?

A. The two are substantially identical.

Mr. Lane: That is all.

991 Cross-Examination.

By Mr. Bristol:

Q. Does the Davis patent show warped or irregular impellers? You do not have to look at the machine to know that.

A. My hesitation was because I thought you referred to the machine. It does not.

Q. Will you just raise up the lid, please, on Defendant's Exhibit 47, and display the impeller?

A. (Witness complies.)

Q. State, please, whether that impeller is warped?

A. It is slightly warped.

Q. State how much it departs at the periphery from a plane, if you can estimate that?

A. Of course that question does not mean anything.

Q. Never mind whether the question means anything.

A. Then, I can't answer.

Q. Please state how much the impeller departs at the periphery from a plane?

A. At what point in the periphery? The maximum point?

Q. Yes.

A. Has anybody a straight-edge here that I can borrow. In one direction I am laying this straight-edge which is loaned to me by one of the gentlemen present, a steel straight edge, across one diameter of the impeller, the first one I happen to use and that is not measurably departing

from a straight line. We will now turn it at right
992 angles. Running a tangent across at right angles on the face of the disk, and having it in contact from one side to the center, it then begins to taper from the center and at the extreme edge on the opposite side tapers less than a quarter of an inch.

Q. Those figures that you gave me just now are not any measure of the warping, are they?

A. I think they are the best measure of the warping that I could devise.

Q. Your idea is a pretty good measure a warped surface isn't it?

A. Not anywhere near as good as a straight-edge.

Q. Take a look across at the plane. Take a look at the upper surface of that impeller and tell me whether it is badly warped?

A. I would not call it badly warped. It is warped.

Q. Substantially warped isn't it?

A. We will find that out if you will give me a plane.

Mr. Lane: Any more warped than it would be in actual use?

A. No, sir.

Q. Suppose we come back to that later. Now, this impeller [disk] is made up of two plies of wood at right angles to each other, isn't it?

A. Yes, sir; that is common in all of these machines, I think.

Q. Are these two plies co-extensive?

993 A. The wood being at right angles to each other, and the wood swelling in the one in the direction across the grain more than it does lengthwise of the grain, one of the [disks] projects beyond the other a maximum, in one place, of 3/16th.

Q. And that same ply extends at the opposite diameter beyond the other ply, doesn't it?

A. Yes, sir, a little less than the one I gave as the maximum.

Q. And vice-versa as the plies are reversed?

A. Well, I don't know the vice versa, but in the other direction, at right angles to that, the other ply extends, one ply beyond the other something less.

Q. In other words, as this machine now stands, neither [disk] is circular, is it?

A. Not perfectly, probably; it would be impossible to have a perfect circle.

Q. And the effect is as of two ellipses with their major axes at right angles?

A. If they started to be circles, and of course I don't know that.

Q. Do you find any impeller irregular like that, shown in the Davis patent?

A. I think it is the inevitable result of [comstructing] an impeller from the disclosure of the Davis drawings of wood. It cannot do otherwise when used in water, but they both started at the same dimension before they are wet
994 and after they are wet, due to the very nature of the wood, they must expand in different directions and that causes that effect you have described.

Q. When did you first see this particular machine, Plaintiff's Exhibit 47?

A. I don't know. The first time I saw it and tried it myself in operation was last night, I think. It was since I have come here to Kansas City.

Q. Did you see the machine in Chicago at all?

A. No, sir, I haven't seen it at all there.

Q. What is the condition of the agitator so far as buoyancy is concerned? A. It will float.

Q. And fairly well water-soaked, isn't it?

A. Yes, sir.

Q. Now, turning back again to this other machine, Plaintiff's Exhibit 48, will you state what the condition of the impeller on this machine is with regard to warping?

A. I think this is a little less warped than the other but neither of them are warped very much.

Q. But both of them are warped considerably, aren't they? A. No, sir.

Q. We are just getting into a debate on how much?

A. Yes I would say slightly, and I have given you
995 the dimensions which will enable you to understand what I mean by slightly.

Q. Those dimensions you gave me do not really determine the extent of warping, do they?

A. Yes, in one direction they do. I think in order to get the true measure of warping it would have to be applied to a plane, and I have not been able to do that.

Q. You have not done that? A. No, sir.

Q. What is the condition of the impeller disk in this machine, Exhibit 48, with regard to the displacement of the two plies relatively to each other?

A. About the same as in the other case; that is, each individual ply has swelled in the direction across the grain, and since the two are placed at right angles to each other as regards the grain there is a projection of one over the other in the case of both plies.

Q. And what is the condition of the impeller on this machine as to buoyancy?

A. That is the same; it will come up through the water, when the clothes are not in there to the top. As you pushed it down there into the mass of clothes, some of them are on top and they are holding it down.

Q. It comes up rather slowly, doesn't it? A. Yes.

Q. And as to the displacement of one ply with relation to the other this machine is worse than Exhibit 47, isn't it?

996

A. No; I would say it was about the same. We are talking in terms of sixteenths of an inch, Mr. Bristol.

Q. How many sixteenths?

A. I said a maximum of three-sixteenths in the first machine and I have not measured in the second.

Q. About 4/16th in the second, isn't it?

A. Something around there.

Q. Would the warping of those disks, in your opinion, be a competent explanation of the difference between the performance of these two machines and the performance on the 1900 Form 3 machine which you observed at the Hotel Baltimore demonstrations?

A. I don't think so; I tried to analyze that and my method of arriving at my opinion is this: If it is warped in the form of a screw,—which let us assume—I do not think so, but let us assume—that would be the worst condition possible,— if it were warped in the shape of a screw when it moved to the right it might sink, but the next moment it would move to the left and come right back to where it started from, so I don't think the warping would have any substantial effect on it.

Q. Have you tried on these two machines a disk which is unwarped?

997

A. I would not know how to get such a structure made of wood. It would have to be made up of some special metal that would not warp.

Q. You haven't tried an unwarped disk on these two machines, have you?

A. These are the only disks that I have tried on these machines.

Q. I understood you to say had operated some other 1900 Form 1 machines somewhere?

A. I operated one at my laboratory.

Q. And that is all?

A. That is all. These three are all.

Q. That is the basis, is it, of your inference, that the 1900 Form 1 machines must operate so that the impeller goes down?

A. That is my experience, but from the patent—

A. (Interrupting) That is the basis of your inference?

Mr. Lane: Let him finish, please.

A. No. Like most engineers, Mr. Bristol, I am a pragmatist; I am convinced more by what I see than by how I theorize and I have seen these machines that operate that way. I think they all operate that way and they certainly would operate that way if they worked in accordance with Mr. Davis' disclosure because he implies some sort of suction underneath and that would tend to pull it down. I don't know whether there is anything to it or not. I never experimented to find out. I simply know those three machines that I have used invariably perform as you saw them perform this afternoon.

998 Q. You saw the demonstration of the 1900 Form 3 machine which Professor Taggart performed at the Baltimore Hotel, didn't you?

A. Yes, sir.

Q. You didn't see anything phoney about that, did you?

A. I don't know. I saw he had left off a loose vane there. Whether that would have any effect I have not the slightest idea. I certainly would not imply for one moment that was purposely left off.

Q. You don't think that would be a difference competent to account for the failure of that impeller to go down?

A. I don't know. That was the only difference I observed.

Q. Didn't you observe that that impeller was perfectly flat?

A. No, sir, I didn't. I didn't have the [oppositunity] to do so. I don't believe that it is, as a matter of fact.

Q. Well, you are invited to examine that and make a statement with regard to what you observe.

A. I don't believe that I could possibly measure with anything available to a degree of accuracy that would enable me to say that it was not warped. I know that we had warps and I don't see why that piece of wood should not warp the way the other three I know did.

Q. You did not need an instrument to determine that the two in the room here were warped?

A. It is perfectly obvious to the eye that it is warped
999 to a slight extent,—that is to a practiced eye. I think some people would fail to see it.

Q. You have never operated any other 1900 Form 1 machines than the two which are here and one other somewhere else?

Mr. Lane: You have said that at least five times already.

Q. Please answer the question.

A. It is a fact.

Q. Now, about this Miller apparatus,—the testimony which you gave on your direct examination as to the tracer cloth being always near the top of the tub, which demonstration did that refer to,—the one in the old time porcelain tub or the one in the glass tub?

A. I was referring in my direct testimony to the old time porcelain tub.

Q. And did you see the same agitator operated in the glass tub?

A. I saw what purported to be the same type of agitator, yes, sir. Was it the same one?

Q. Wait a minute. Was it the same agitator?

A. I don't know; I saw an agitator.

Q. It was the same agitator?

A. I don't know.

Q. The record will show it was taken right out of the old tub and put into the glass tub.

A. This is the Miller we are talking about, Mr. Bristol?

Q. Yes, sir. Now, you could see the operation more
1000 clearly in the glass tub than you could in the porcelain tub, couldn't you?

A. Very clearly, yes, sir.

Q. And the weight of the tracer cloth is greater than the weight of the water in which it floats, isn't it; that is, the specific gravity?

A. I presume so; I don't know.

Q. So that the tracer cloth itself alone would sink to the bottom, in time?

A. Unless there was agitation.

Q. And you actually saw it sink to the bottom in the glass tub ones, did you, of defendant's?

A. I think so, yes, sir.

Q. What raised it up so that it could stay near the top for seven minutes?

A. The agitation of the water caused by the movement of the impeller.

Q. So that tracer cloth was substantially in suspension, wasn't it?

A. For a very brief time, yes, sir.

Q. Seven minutes?

A. No, sir. The seven minutes I referred to was when the goods were in the old Miller tub. There was 3½ pounds in there acording to my notes and at that time the tracer cloth never left the top. In the other tub, the glass tub
1001 which you are now talking about, I assume, I made other observations.

Q. You saw the tracer cloth come up from the bottom in the glass tub, didn't you?

A. I haven't a record of that. My record refers to pieces of garments that stayed absolutely stationary in that glass tub for nine minutes.

Q. Mr. Lane asked you about some testimony of Professor Taggart in the Brooklyn Edison case with regard to oscillations at 60 as compared with 45. I read you Professor Taggart's testimony as follows: "No, I have observed the rate at which the fabrics move with different rates of oscillation, and there is certainly no difference corresponding to the power rule of suspension, for the reason that the fabrics are not moved in suspension and the power rule of suspension does not apply." Do you agree with that?

A. I don't know what he means by power rule.

Q. In another question Mr. Lane asked you with regard to some testimony of [Profession] Taggart and stopped his reading of Professor Taggart's testimony without completing Professor Taggart's answer. He was referring to the Davis machine and Professor Taggart said "Yes, that is right".

Mr. Lane: In answer to what?

Q. "By the method of rubbing, pounding, squeezing and dragging as distinguished from mere circulation of water", Professor Taggart said "That is right. Just as we
1002 see it acting in the swishing of the fabrics back and forth in the water." Do you agree with that?

A. Yes, sir.

Q. I understood you to say that a dolly is a thing to grab and move things about in the tub.

A. I don't know as I said "grab" but I said "move things about" and I had in mind when I gave that illustration the possibly facetious statement of your own yesterday when you brought in a machine on what you called a dolly and asked Professor Taggart if that also was a dolly, something that carried the machine. That is the usual meaning of the word "dolly," something that conveys another thing.

Q. Something that grabs the clothes in a washing machine?

A. In the washing machine are, I think it does refer to grabbing the clothes.

Q. And moving the things around in the tub?

A. Yes, sir.

Q. Swishing them back and forth?

A. Possibly; possibly grabbing them.

Q. Does it make any difference as to who is using the word as to the meaning of the word?

A. I presume so because everybody has their own definition.

Q. I don't happen to have handy this exhibit which was introduced this afternoon but I have a duplicate of it.

1003 I refer you to a Maytag drawing dated December 21, 1921, showing part Number 1447 and ask you to read the caption on that drawing?

A. "Sub-hydro agitating dolly for washing machines."

Q. What does "dolly" mean there?

A. I don't know. That particular period, was, of course, in a transitory stage, where they were moving in the art, as I understand it, from the ordinary dolly type where squeezing, pressing and rubbing occurred to this new type of what might be called temporarily a dolly and might even have been called a dolly today but I think the general definition of a dolly is as I described, but workmen and others may refer to this particular impeller in the Maytag machine as a dolly even today.

Q. Now, I show you Unruh patent Number, 1459,483, and ask you how the impeller there shown compares with the impeller that is in the Maytag machine which was used [to] washing lace curtains this afternoon?

Mr. Lane: I object to that question, going at this late date into a comparison of patents that have been adjudicated later in invention than the patent in suit, by the Interference proceeding. The man did not make his invention until long after Snyder had filed and I object at this late time as incompetent, irrelevant and immaterial; not proper cross examination.

The Court: The last objection is sustained.

1004 Mr. Bristol: If your Honor please, if I may just show what I am driving at. This is a showing in the patent of this washing machine and the title says "Dolly for washing machines."

Mr. Lane: It says "It is being used in a well known washing machine preceding"—shows on its face it was preceded.

Mr. Bristol: May I continue with this question as proper cross examination concerning the interpretation which the witness has attempted to place in the interpretation of the Jardine patent.

The Court: You may ask him about the interpretation of that word.

Q. If one is called a dolly is the other properly called a dolly?

A. It might be by some people. Personally, I would call neither of them a dolly if the purpose is that disclosed in

Snyder. I do not know what Unruh is trying to do but if he was trying to do what Snyder was, my [dessignation] of that would be an impeller but I would imagine that others might call it a dolly and mean the same thing that I did.

In some particular cases I think the usage would be
1005 rather improper.

The Court: What is the origin of that word dolly?

The Witness: I think it comes first, as Professor Taggart suggested the other day, from small little trucks that carry things about.

The Court: What is its derivation? Does it have any meaning in itself or is it just a word that was picked up?

The Witness: I don't think so; I think it is a word such as many mechanics use, for instance a jack. We do not know what jack means; we all know what a jack is but we do not know what the derivation was.

Mr. Bristol: I would like to offer in evidence the patent which the witness has referred to, not for any other question than for its use of the term "dolly".

Mr. Lane: Very well. You mean what you referred to with the witness.

Mr. Bristol: Yes, and I have not a loose copy [—] hand here. If this can be marked I will substitute a loose copy later.

Mr. Lane: I understand it is being offered only for that purpose?

Mr. Bristol: That is all. Of course it is mentioned in that decision that Mr. Lane put in recently.

(Patent referred to marked Defendant's Exhibit 49 for identification and received in evidence).

1006 ARTHUR F. TAGGART,

Called as a witness on behalf of the defendant in surrebuttal, having been previously sworn, further testified as follows:

Direct Examination

By Mr. Bristol:

Q. Professor Taggart, have you seen the demonstration of the old 1900 Form 1 washing machine, Plaintiff's Exhibits 48 and 47 this afternoon?

A. Yes.

Q. And you saw the agitators or the shafts of the agitators go down into the tub as those machines were operated?

A. Yes.

Q. You also performed at the Hotel Baltimore a test on a 1900 Form 3 machine, did you not? A. Yes.

Q. Will you please state if you can what differences there are in the machine which you operated and the machine which Professor Kenerson operated and state whether you can account for the difference in performance?

A. The impeller that I had was—well, I had two impellers operating; one of them was lacking a rib as Professor Kenerson has pointed out and one of them was not lacking a rib. Neither sank so that the lack of the rib is clearly not the reason for the failure to sink. There is no reason why a symmetrical circular disk oscillated at
1007 the surface of water should begin to climb down under the water so that when a disk does that you have got to look for some departure from uniformity. These disks have two obvious departures, namely a noticeable warping and a noticably uneven swelling of the two plies that constitute them so as to give you a shelf, two shelves on opposite diameters,—diameters at right angles, in the one case the upper ply overhanging, in the other case the lower ply overhanging. Now, those are two definite irregularities in the apparatus, both of which will tend to make its oscillation in a resistant medium irregular. It is quite apparent that it was irregular because of the fact that the thing, instead of moving in one plane, which is the way the power is applied to it, also moves in another plane at right angles to it, which would have been the result of irregularity. Now, I cannot say absolutely that that is the reason because on some such analysis as Professor Kenerson made here that what tends to carry it under on one stroke would seem, if the thing stayed in the same plane to carry it out on the reverse stroke but if also you have a lot of loose motion in the mechanism, as you have here, then it is very possible that the angle of the disk would be different on one stroke than it was on the other and that then would tend to
1008 cause a definite progress in one direction. I am certain that it is the irregularities that make it go down.

Mr. Bristol: That is all.

Cross Examination

By Mr. Lane:

Q. Did you ever wash any actual washing in one of these 1900 Form 1 machines? A. No. I did in the Form 3.

Q. You have never seen how the regular commercial run of them such as you have got here work out?

Mr. Bristol: I object to that especially as these are unproved.

The Court: Overruled, exception allowed.

A. I have not seen these particular machines, this particular kind of machine work in washing.

Q. Well, this machine except for the ordinary wear and tear, is almost identical with the one that was over in the Baltimore Hotel when we took the testimony and was designated as Deposition Exhibit 2 A, wasn't it?

A. It is most definitely non-identical because it performs in a way—

Q. Did you perform with that machine that is all broken down? A. No.

1009 Q. That is the one I am asking about?

A. No; I know nothing about the identicality.

Q. And you have not looked at it to see how they compare? A. No.

Mr. Lane: That is all.

(Witness Excused).

1010 ROY YOUNG,

on behalf of the Defendant, in sur-rebuttal, testified as follows:

Direct Examination

By Mr. Bristol:

I reside in Fort Wayne, Indiana, and I am employed by the General Electric Company. I am an engineer in the fractional horse power engineering department in the Fort Wayne plant of the G. E. Company. I have been in that department since 1913.

I am familiar with the characteristics of fractional horse power motors put out by that department since, say 1915 or 1918; that is my work entirely there, with the fractional horse power motors.

I have at your request examined the electric motor on the washing machine Plaintiff's Exhibit 8 A. That is a Model 27468, Type S. A., Frame 147, Form D. B., 110 volts, 5.4 Amperes, ¼ horsepower, 1725 R. P. M., 60 Cycle, 1 phase, 40 degrees continuous rating. It was made by the General Electric Company at Fort Wayne, Indiana.

I recognize that particular motor as of a type with which I am familiar. The earliest date at which any such motor was put out by the General Electric Company was 1924.

I brought with me some records of the General Electric Company relating to motors of this type. Before I refer to those records I will say of my own independent knowledge, that it was not put out before 1924.

Now, referring to the records, this exhibit shows our
1011 index or listing of these various model numbers we have for all of the different ratings of motors. Our

first one on this index of this type is Model 26136. That was written in January 15, 1924.

There is something peculiar about this type of motor that differentiates it from earlier types. It was an entirely new design. The rotor on here is a special design intended for the particular use to which it is applied there. I have a drawing showing the punching for such a rotor. The rotor punching used on this motor is drawing K 1799372 and was made August 29, 1923. The time when this particular type of motor first got into production would have to be following August 29, 1923. We had to tool up and it would be necessary to get tools made and get this into the factory before it could be produced and the drawings had to be made before the motor could be produced.

This motor is Model 27468. That shows on my records. It is the third of this particular sort of motor that we made up. The earliest specification for motors of this type bears the date January 15, 1924.

This is a stock motor which was produced by General Electric Company in quantity at that time. The motor here in this washing machine, Plaintiff's Exhibit 8 A is a stock motor.

Cross-Examination.

By Mr. Lane:

The motor on Exhibit 9 is the same number model, 27468, and was made in 1924. All the motors that were supplied by the General Electric Company to the Maytag Company were not made at Fort Wayne, Indiana.

1012

Q. Where were the motors that the General Electric Company made and sold to the Maytag Company from 1910 on made?

A. Those made around 1910 were made in Fort Wayne; those made at a later date were made in Decatur.

Q. Will you just state the exact motors that were made by the General Electric Company for the Maytag Company from the time they first started making motors for sale to the Maytag Company until the present time?

A. That is impossible to answer because I do not have records here indicating all of the various model numbers that were made for them.

Q. Have you anything to show the exact motors that were sold by the General Electric Company to the Maytag Company in 1919, 1920, 1921, 1922 or 1923?

A. Those motors have been sold to other companies and would have the same specifications as those furnished to Maytag.

Q. I am asking you one question?

A. No, sir.

Motors of substantially the same horse power were sold to the Maytag Company by the General Electric Company from the year 1919 to 1933 as is in this machine Exhibit 8A.

1013 I do not know how many they sold them during that period from 1919 to 1924. There were large quantities. They did not sell them all the motors that they used for washing machines of that time. I cannot give you figures as to the proportion; but they were not all. A very large proportion of all the motors bought and used by the Maytag Company on its washing machines were not bought from the General Electric Company during that period. I cannot give you the proportion. I cannot tell you how many motors we sold the Maytag Company during that time. I cannot say how many thousands. I would say hundreds of thousands.

I don't know how many motors the Maytag Company has bought from the General Electric Company since I have been connected with the General Electric Company. I do not think it is millions.

Q. You think they have not bought more than a million?

A. I can't answer that.

Q. Isn't it a fact that they have bought more than a million within your general knowledge?

A. I can't answer.

My job is working in the engineering department, fractional horsepower engineering department. I do not have anything to do with the sales. I have nothing to do with the production.

Q. You don't know the number that the Fort Wayne

1014 plant of the General Electric Company has produced, do you?

A. In a general way.

Q. How many did they produce during the years from 1919 to 1924?

A. I can't answer that.

Q. Well, the fact is that General Electric Company supplied the Maytag Company with a motor that worked just as well on that machine substantially as the one that is there now, isn't that right? A. Yes, sir.

Q. And that was prior to and in 1919 or 1920? A. Yes.

Q. And it is a fact, though, that the General Electric Company has kept very close tab on the actual construction of the Maytag washing machines in connection with its supply of motors to that company since 1922, isn't that true?

A. No, sir.

Q. You mean that the salesman is not very frequently at the Maytag Company and has not been, during the entire period? A. He has been there.

Q. He has been there frequently, hasn't he? A. Yes, sir.

Q. Followed that business closely? A. Yes, sir.
Q. When was it that the Maytag Company discontinued quite largely purchasing motors from the General Electric Company. A. I don't know.
Q. Wasn't it about 1930? A. I don't know.
1015 Q. You haven't any records to dispute the fact that they did substantially discontinue in 1930, have you?
A. Not here I haven't.
Q. And you have not anywhere as far as you know?
A. I am unable to answer that.
Q. Who requested that you come over here?
A. My superior in the office, Mr. Noble.
Q. And you took this trip simply for the purpose of testifying in this case? A. I did.

1016 Order Settling Statement of Evidence.

This cause came on to be heard for settlement of the statement of evidence and was argued by counsel and considered by the Court, and the Court being fully advised in the premises it is now

Ordered that the condensed statement of the evidence lodged by the defendant-appellant on or about May 18, 1938, as amended, contained in Volumes 1 and 2, pages 1 to 865, is approved as a true and correct condensed statement of the proceedings of the trial of this cause; and it is further

Ordered that plaintiff's exhibits numbers

1; 5-C; 6-A to O inclusive; 7-C; 7-D; 9-A; 10-A; 11-A; 11-B; 11-C; 11-D; 11-E; 11-F; 12-A; 12-B; 13; 14; 15; 16; 16-A; 16-B; 16-C; 16-D; 16-E; 16-F; 17; 18-1; 18-2; 18-3; 18-4; 18-5; 18-6; 19-1; 19-2; 19-3; 20; 21; 22; 23; 24; 25; 25-A; 25-B; 25-C; 25-D; 25-E; 26; 27-1; 27-2; 28; 29; 30; 31-A to F inclusive; 32; 33; 34; 35; 36; 37; 38; 39; 40; 41; 42; 43; 44;

as identified by the markings thereon and contained in an envelope marked "Plaintiff's paper exhibits", and defendant's exhibits numbers

1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 25; 26; 31; 32; 33; 34; 35; 37; 38; 39; 42; 43; 44; 45; 46; 46-A; 47-A; 47-B; 48; 49;

as identified by the markings thereon and contained in four volumes, marked respectively "Defendant's Main Exhibit Book", "Defendant's Exhibit 38 (Exhibits of 1900 Depositions)", "Defendant's Exhibit 39 (Exhibits of Miller Depositions)", and "Book of Prior Patents", and in an envelope marked "Defendants' Exhibit 35, Snyder file history", are approved as the documentary exhibits which were offered and received in evidence at the trial of this cause, and it is further

Ordered that plaintiff's exhibits numbers

1017 3; 4; 5; 5-A; 7; 7-A; 7-B; 8; 8-A; 9; 10; 11; 12; 45; 46; 47; 48;

and defendant's exhibits numbers

14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 27; 28; 29; 30; 36;

as identified by the markings thereon and retained, pursuant to stipulation, in the custody of the respective counsel who produced them, are approved as the physical exhibits which were offered and received in evidence at the trial.

MERRILL E. OTIS, Judge.

Received copy of the above order this 31st day of May, 1938.

PARKINSON & LANE,
NELSON E. JOHNSON,
Attys. for Plaintiff-Appellee.

Filed in the United States District Court May 31, 1938.

(Order Directing Clerk of United States District Court to Transfer Original Documentary Exhibits to Clerk of United States Circuit Court of Appeals.)

This cause came on to be heard on the application of the defendant-appellant for an order directing the Clerk of this Court to transmit the original documentary exhibits filed with and approved as a part of the statement of evidence in this case to the Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, and was presented by counsel for plaintiff-appellee and defendant-appellant and considered by the Court, and the Court being fully advised in the premises and for good cause shown, it is now

1018 Ordered that the original documentary exhibits filed with and approved as a part of the statement of evidence and described in the order settling the statement of evidence, be by the Clerk of this Court forwarded to the Clerk of the United States Circuit Court of Appeals for the Eighth Circuit as a part of the transcript of the record on appeal in this case, and it is further

Ordered that when the record has been printed that a copy of the printed record be filed with the Clerk of this Court, together with copies of any of said documentary exhibits which have not been reproduced therein, in lieu of said original exhibits.

Dated June 14, 1938.

MERRILL E. OTIS, Judge.

Filed in the United States District Court June 14, 1938.